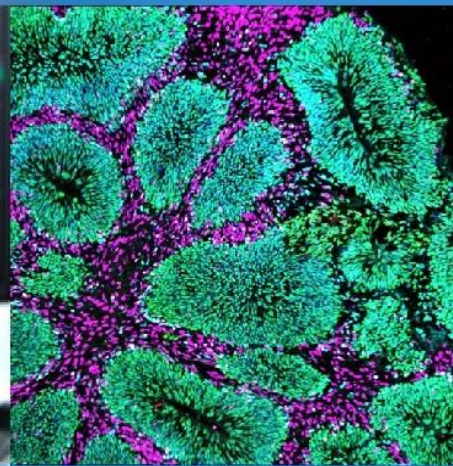
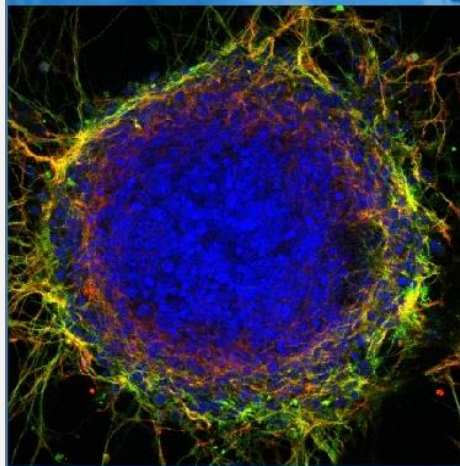


8th AKU Annual  
Surgical Conference

# Stem Cells: A New Frontier in Surgery



## Conference Booklet

February 17-19, 2023

[www.aku.edu/aasc](http://www.aku.edu/aasc)



آغا خان یونیورسٹی  
THE AGA KHAN UNIVERSITY

## About the 8th AKU Annual Surgical Conference

Stem cells are undifferentiated or partially differentiated cells capable of self-renewal that can differentiate into other cell types and tissues. Stem cell research in recent years has produced considerable implications for improving quality of life by providing new therapies for a number of conditions, including bone marrow transplantation, metabolic and autoimmune diseases, as well as certain cancers. The spectacular progress of basic stem cell and regenerative medicine research has led to a number of clinical trials across the world, leading to new prospects within all surgical specialties.

This conference will provide a platform to engage, empower, evolve and explore knowledge among both academicians and industry researchers. Our aim is to gather leading scientists, researchers and academicians around the world to share their knowledge and experiences in all aspects of stem cells in surgery.

### Learning Objectives:

- develop and support a highly collaborative environment for the stem cell research, clinical translation and education;
- cultivate a broad range of interdisciplinary stem cell research (i.e., basic and translational research); and
- encourage rapid translation of discoveries into innovative and practical clinical applications that will enhance the understanding, diagnosis, treatment, and prevention of multiple human diseases.

Organised by the AKU Medical College's Department of Surgery from February 17-19, 2023 in Karachi, the conference aims to discuss current research, explore opportunities for new collaborations, and identify the most important needs and priorities for future progress in the implications of stem cell therapies in surgery.

For more information, please visit the event website: [www.aku.edu/aasc](http://www.aku.edu/aasc)  
or contact:

Department of Surgery  
Aga Khan University, Karachi, Pakistan  
Tel: +92 21 3486 4374 / 3486 2152  
Email: [surgery.events@aku.edu](mailto:surgery.events@aku.edu)

## Message from the Chair, Department of Surgery



**Saleem Islam**

I welcome all national and international participants and faculty to the AKU Annual Surgical Conference as Chair, Department of Surgery. These are exciting times to be a part of the Department of Surgery and to be able to participate in my first Annual Surgical Conference as Chair, and watch the team work its magic under the direction of Dr. Ather Enam.

Annual Surgical Conference has provided the Department of Surgery, with a platform to maintain its reputation as a regional academic leader. The themes of the previous annual surgical conferences have always been very relevant both locally and globally. This is the 8th AKU Annual Surgical Conference (8AASC) and the theme of this year's conference is 'Stem Cells: A New Frontier in Surgery'.

Recently, there has been increasing interest in stem cells. The ability to repair and regenerate, which then helps restore form and function, has been a quest for science for many years and in many ways represents the holy grail of medicine. There is a need to establish more research centres and more studies regarding stem cells role in treating incurable diseases in Pakistan and I'm sure the 8AASC will develop and support a highly collaborative environment for stem cell research, clinical translation and education.

This conference will bring together national and international experts, providing them a platform to exchange their knowledge and learn from each other about the stem cells. I am thankful to all the guests who have gathered here with us on our invitation. Finally, I must congratulate Dr. Ather Enam and Dr. Fazlur Rahman for this excellent effort.

### **Saleem Islam**

MBBS (AKU), MPH, FACS, FAAP

(Diplomate American Board of Surgery and Pediatric Surgery)

Quaid-e-Azam Professor and

Chair, Department of Surgery

Aga Khan University, Karachi

## Message from the Chair, Organising Committee



**Mohammad Fazlur Rahman**

Welcome to the 8<sup>th</sup> AKU Annual Surgical Conference (8AASC) at the Aga Khan University, Karachi. I have been given the honor of chairing this year's of our prestigious AKU Annual Surgical Conference (AASC) and It is my pleasure to welcome all the faculty, trainees, students, researchers, and health care professionals from all over the world (physically and virtually).

The theme of 8AASC is Stem Cells: A New Frontier in Surgery'. Stem cell research (SCR) is an emerging field of study and holds unprecedented promise for cell-based therapies and regenerative medicine. SCR has sparked tremendous scientific and public excitement. However, a range of ethical and moral concerns, legal challenges, and public controversies have emerged. In this conference, we have highly enlightening talks, discussions and knowledge exchange experts.

Like previous years, we have once again collaborated with the Journal of Pakistan Medical Association (JPMA), and published a special supplement with 8AASC. A total of 26 articles were accepted for publication. The final list of articles was forwarded to JPMA for final editorial review, along with the reviewer's comments. We must mention that some of the rejected articles were actually of reasonable quality but could not be accepted either due to deviation from the theme or requiring major revisions in either format or language, which given the short time-line was not possible to edit for this particular supplement.

As a tradition, pre and post-conference CME activities are an integral part of 8AASC. This year we are organizing seven (7) CME activities, out of which Five (5) are hands-on based activities. Also, It gives us immense pleasure to say that after the success of 1st and 2nd Fundamentals of Surgical Research Course, the 3rd Fundamentals of Surgical Research Course (Virtual) is also a part of this conference. This course has been endorsed by the Association of Academic Surgery (AAS). All pre and post-conference CME activities and scientific sessions are accredited by the AACME (CME Credit Hours).

I must appreciate the many hours of work by members of the Organizing Committee, Scientific Committee (chaired by Syed Ather Enam), Workshop Committee (chaired by Nadeem Siddiqui), Publications Committee (chaired by Sana Zeeshan) Basic Sciences Committee (chaired by Azhar Hussain), Communication and Liaison Committee (chaired by Nuzhat Faruqi) and Alumni Event Committee (coordinators: Fareed Shaikh and Naveed Baloch). This exercise would be meaningless without the passion and involvement of our collaborating Department Centre for Regenerative Medicine and Stem Cell Research (CRM). We must thank our partners in the pharmaceutical and implant industry for their continuing support of our academic endeavors. Here I want to appreciate our medical students in Surgery Interest Group (SIG), who always be a part of AASC. Last, but certainly not least, one cannot conclude anything on this conference without mentioning the tremendous support and input by our administrative staff, Mr. Shariff Charania. He has worked day and night to make this conference a success.

We look forward to welcoming you all and we hope for your active participation in the 8<sup>th</sup> AKU Annual Surgical Conference to be held on February 17-19, 2023.

**Mohammad Fazlur Rahman**

M.B.B.S. F.C.P.S. (Plast Surg), M.D. (U.S.A.)  
Chair Organising Committee, 8AASC  
Consultant Plastic and Hand Surgeon  
Interim Head, General Surgery  
Department of Surgery  
Aga Khan University, Karachi

## Message from the Chair, Scientific Committee



**Syed Ather Enam**

The theme of the 8th AKU Annual Surgical Conference (8AASC) is 'Stem Cells: A New Frontier in Surgery'. It gives me immense pride in sharing this year's scientific program, we have been able to build upon previous annual surgical conferences both in terms of scale, and scope.

In Pakistan, clinical specialties and basic science operate in silos traditionally. However, top institutions across the world have always put these two together. The 8AASC aims to initiate this alliance. It will discuss current research, explore opportunities for new collaborations, and identify the most important needs and priorities for future progress in the implications of stem cell therapies in surgery.

At the 2020 global convocation of Aga Khan University, the Chancellor, His Highness the Aga Khan highlighted the role of AKU in building its capacity for cutting-edge research applicable to the distinctive health risks for populations in Asia and Africa. To this aim, the Chancellor had said "It (AKU) will seek to harness the enormous potential of advances in artificial intelligence, genomic medicine and stem cell science to address tomorrow's challenges as well as today's".

The AKU's Center of Regenerative Medicine and Stem Cell Research (CRM) became operational in 2016 and is now a part of the AKU Medical College. This state-of-the-art facility was established in collaboration with the University of California, San Francisco's (UCSF) Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research. The 8AASC is being organised by the AKU Medical College's Department of Surgery in collaboration with CRM from February 17-19, 2023, at Aga Khan University Karachi.

The conference will bring together national and international experts, providing a platform to exchange robust ideas and learn from each other. So far, the conference has generated unprecedented excitement, but our ultimate goal is to provide a platform to engage, empower, evolve and explore knowledge among both academicians and industry researchers.

Our aim is to gather leading scientists, researchers and academicians around the world to share their knowledge and experiences in all aspects of stem cells in surgery. Further to that, building upon the Chancellor's message in his 2003 convocation speech for AKU to strengthen its public policy commitment, the conference will also serve as a platform to cultivate and expand ethical and policy dialogue surrounding stem cell research in the context of Pakistan.

Once again, I extend my warm welcome to all the delegates to the 8AASC at Aga Khan University, Karachi.

**Syed Ather Enam, SI**

MD, PhD, FRCSI, FRCSC, FRCSG, FACS

Scientific Chair, 8AASC

Professor of Neurosurgery

Department of Surgery

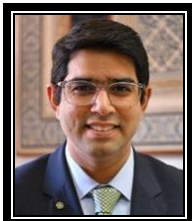
Scientific Director, Juma Research Laboratories

Aga Khan University, Karachi

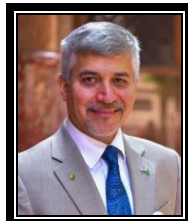
## Conference Team

### Patrons

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**Adil Haider**  
Professor, Surgery  
Dean, Medical College, AKU



**Saleem Islam**  
Professor, Pediatric Surgery  
Chair, Department of Surgery

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### Conference Committees



**M. Fazlur Rahman**  
Chair, Organizing Committee  
Assistant Professor, Plastic Surgery



**Syed Ather Enam**  
Chair, Scientific Committee  
Professor, Neurosurgery



**Azhar Hussain**  
Chair, Basic Sciences, Scientific Committee  
Director, Biological & Biomedical Sciences



**Nadeem Siddiqui**  
Chair, Workshop Committee  
Assistant Professor, Vascular Surgery



**Sana Zeeshan**  
Chair, Publication Committee  
Assistant Professor, Breast Surgery



**Nuzhat Faruqi**  
Chair, Communications & Liaison Committee  
Assistant Professor, Urology





**Abida Sattar**  
Co-Chair, Organizing Committee  
Associate Professor, Breast Surgery



**M Rizwan Khan**  
Co-Chair, Organizing Committee  
Professor, General Surgery



**Rizwan Haroon**  
Co-Chair, Scientific Committee  
Assistant Professor, Orthopaedics



**Syed Murtaza Raza Kazmi**  
Co-Chair, Workshop Committee  
Assistant Professor, Dentistry



**Zia ur Rehman**  
Co-Chair, Publication Committee  
Associate Professor, Vascular Surgery



**Syed Muhammad Nazim**  
Co-Chair, Publication Committee  
Associate Professor, Urology



**Lubna Vohra**  
Co-Chair, Communications & Liaison Committee  
Assistant Professor, Breast Surgery



**Fareed Shaikh**  
Organiser, Alumni Program  
Assistant Professor, Vascular Surgery



**Naveed Juman**  
Organiser, Alumni Program  
Assistant Professor, Orthopaedics



**Shariff Charania**  
Conference Coordinator  
Specialist, Surgery

## Committee Members

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Adil Haider, Dean Medical College, AKU, Patron  
Saleem Islam, Chair, Department of Surgery, Patron  
Fazlur Rahman, Conference Chair  
Abida Sattar, Conference Co-Chair  
M. Rizwan Khan, Conference Co-Chair  
Syed Ather Enam, Chair, Scientific Committee  
Rizwan Haroon, Co-Chair, Scientific Committee  
Azhar Hussain, Chair, Scientific Committee (Basic Sciences)  
Nadeem Siddiqui, Chair, Workshop Committee  
Syed Murtaza Raza Kazmi, Co-Chair, Workshop Committee  
Sana Zeeshan, Chair, JPMA Publication Committee  
Syed Muhammad Nazim, Co-Chair, JPMA Publication Committee  
Zia ur Rehman, Co-Chair, JPMA Publication Committee  
Nuzhat Faruqi, Chair, Communications & External Liaison Committee  
Lubna Vohra, Co-Chair, Communications & External Liaison Committee  
Fareed Shaikh, Organiser, Alumni Program  
Naveed Juman, Organiser, Alumni Program  
M. Shahzad Shamim, Member, Advisory Committee  
Masood Umer, Member, Advisory Committee  
Sadaf Khan, Member, Advisory Committee  
Hasnain Zafar, Member, Advisory Committee  
M. Hammad Ather, Member, Advisory Committee  
Hasanat Sharif, Member, Scientific Committee  
Tashfeen Ahmad, Member, Scientific Committee  
Farhan Raza Khan, Member, Scientific Committee  
Saqib Qazi, Member, Scientific Committee  
Gulzar S. Lakhani, Member, Scientific Committee  
Sheerien Rajput, Member, Scientific Committee  
Ambrin Fatima, Member, Scientific Committee  
Salma Jahan, Member, Scientific Committee  
Afsar Mian, Member, Scientific Committee  
Hammad Hassan, Member, Scientific Committee  
Fawad Ur Rehman, Member, Scientific Committee  
Sujjawal Ahmad, Member, Scientific Committee  
Akber Jaleel Zuberi, Member, Workshop Committee  
Humayun K. Siddiqui, Member, Workshop Committee  
Syed Shahbuddin, Member, Workshop Committee  
Amber Sultan, Member, JPMA Publication Committee  
Safdar Ali Shaikh, Member, JPMA Publication Committee  
Nida Zahid, Member, JPMA Publication Committee  
Rashna Agha, Member, JPMA Publication Committee  
Shiraz Hashmi, Member, JPMA Publication Committee

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Shariff Charania, Conference Coordinator  
Murad Bana, Conference Coordinator  
Farhan Imran, Conference Coordinator  
Syed Emad, Conference Coordinator  
Fakhra Atif, Surgery Communications  
Sonia Ahmed, PANS Communications  
Saman Qureshi, Medical College Communications  
Maryam Ahmad, Medical College Communications  
Suroor Ansari, Medical College Communications  
Muhammad Irshad, Conference Secretariat and Medical College Administration  
Asad Yaqoob, Conference Secretariat  
Manzoor Yaseeni, Conference Secretariat  
Khawaja Hateem, Conference Secretariat  
Ajmal Rizvi, AVLRC  
Muhammad Farhan, Department of Continuing Professional Education  
Khuram Shahzad, Department of Continuing Professional Education

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### **Surgery Interest Group (SIG)**

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Muskaan Abdul Qadir, Medical Student, Class of 2023  
Emaan Farhan , Medical Student, Class of 2023  
Faiqa Binte Aamir, Medical Student, Class of 2023  
Kinzah Razzak Ghazi, Medical Student, Class of 2023  
Izza Tahir, Medical Student, Class of 2024  
Mabrooka Kazi, Medical Student, Class of 2024  
Javeria Javed, Medical Student, Class of 2024  
Mushahid Hussain, Medical Student, Class of 2024  
Asad Fatimi, Medical Student, Class of 2025  
Warda Ahmed, Medical Student, Class of 2025  
Muhammad Taha Nasim, Medical Student, Class of 2025  
Talal Tariq, Medical Student, Class of 2025  
Muhammad Umar Mahar, Medical Student, Class of 2025



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### **Neuroscience Interest Group (NSIG)**

---

Namrah Aziz, Medical Student, Class of 2023  
Meher Angez, Medical Student, Class of 2023  
Izza Tahir, Medical Student, Class of 2024  
Mohammad Safri, Medical Student, Class of 2023  
Salaar Ahmed, Medical Student, Class of 2025  
Muhammad Jawad Amin Malik, Medical Student, Class of 2024  
Fareeha Nisar, Medical Student, Class of 2024  
Ali Azan Ahmed, Medical Student, Class of 2026



# Speakers

## Orations

### *Ali al-Husayn Ibn-e-Sina Oration*



**Prof. Atta-ur-Rahman**, FRS, N.I., H.I., S.I., T.I.  
UNESCO Science Laureate  
Academician Chinese Academy of Sciences  
Professor Emeritus  
International Centre for Chemical &  
Biological Sciences, University of Karachi

### *Abu al-Qasim al-Zahrawi Oration*



**Prof. Shahid Mahmood Baig**, SI  
Chairman Pakistan Science Foundation  
Ministry of Science and Technology, Pakistan  
Professor  
Department of Biological and Biomedical Sciences  
Aga Khan University

### *Ibn Zakariya al-Razi Oration*



**Marita Eisenmann-Klein**  
Department of Regenerative Medicine  
District Hospital Klinikum Fichtelgebirge  
Marktredwitz, Germany

## International Faculty



**Ahmed A. Rattani**  
Beth Israel Deaconess Medical Center  
Harvard Medical School  
Boston, MA, USA



**Arnold R. Kriegstein**  
Center of Regeneration Medicine & Stem Cell  
University of California San Francisco  
San Francisco, CA, USA



**Bahar Demir Cevizlidere**  
Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



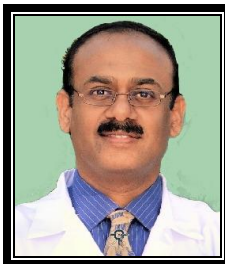
**Burcugul Altug Tasa**  
Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



**Catherine Prescott**  
Biolatris Ltd and Visiting Professor  
King's College London  
England, UK



**Ceren Ozel**  
Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



**Davis C. Thomas**  
Rutgers School of Dental Medicine, New Jersey  
Rochester Medical School, New York  
USA



**Dusko Ilic**  
Stem Cell Science Department  
King's College London  
England, UK



**Helena Pereira de Melo**  
Center of Research Development on Law & Society  
Nova School of Law  
Lisbon, Portugal



**Ilhan Ilkilic**  
Department of History of Medicine and Ethics  
Faculty of Medicine, Istanbul University  
Istanbul, Turkey



**Irem Yilmaz Basaran**

Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



**Mahin G. Ahmed**

Gulf Medical University  
Al Maha Pharmacy  
Ajman, UAE



**Marko Groeger**

Willenbring lab, Medical Center  
University of California San Francisco  
San Francisco, CA, USA



**Merve Nur Soykan**

Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



**Muhammed Murtaza**

Center for Human Genomics & Precision Medicine  
University of Wisconsin-Madison  
Wisconsin, USA



**Rose M. Carter**

Faculty of Medicine and Dentistry  
Dentons Canada LLP  
Edmonton, Canada



**Suleyman Gokhan Kara**

Cellular Therapy & Stem Research Center  
Eskişehir Osmangazi University  
Eskisehir, Turkey



**Waseem Qasim**

Department of Stem Cells Transplantation  
Institute of Child Health  
London, UK

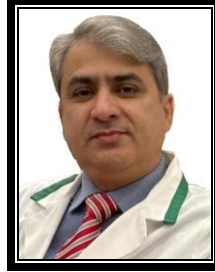
## National Faculty

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**Afsar Mian**

Centre for Regenerative Medicine & Stem Cell  
Aga Khan University, Karachi



**Afzaal B. Bajwa**

Plastic, Reconstructive Surgery and Burn Unit  
King Edward Medical University, Lahore



**Ambrin Fatima**

Biological & Biomedical Sciences  
Aga Khan University, Karachi



**Asmat Salim**

Dr. Panjwani Center For Molecular Medicine and  
Drug Research, ICCBS, University of Karachi



**Azra Mehmood**

Centre for Excellence in Molecular Biology  
University of Punjab, Lahore



**Hammad Hassan**

Centre for Regenerative Medicine & Stem Cell  
Aga Khan University, Karachi



**Irfan Khan**

Dr. Panjwani Center For Molecular Medicine and  
Drug Research, ICCBS, University of Karachi



**Mustehsan Bashir**

Plastic, Reconstructive Surgery and Burn Unit  
King Edward Medical University, Lahore



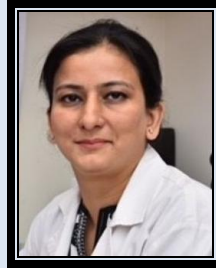
**Natasha Ali**  
Pathology & Laboratory Medicine  
Aga Khan University, Karachi



**Rashid Jooma**  
Neurosurgery, Department of Surgery  
Aga Khan University, Karachi



**Salma Jahan**  
Centre for Regenerative Medicine & Stem Cell  
Aga Khan University, Karachi



**Sheerien Rajput**  
Centre for Regenerative Medicine & Stem Cell  
Aga Khan University, Karachi



**Sohail Kassamali**  
General Counsel & Chief of Staff  
Aga Khan University, Karachi

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## Students' Session



**Marita Eisenmann-Klein**

Professor & Director  
Section of Regenerative Medicine  
District Hospital Klinikum Fichtelgebirge  
Markredwitz, Germany



**Faiz Bhora**

Professor & Regional Chair Surgery  
Chief Thoracic Surgery  
Hackensack Meridian School of Medicine  
New Jersey, USA



**Aftab Ahmad**

Founder and President  
National Academy of Young Scientists (NAYS)  
Pakistan



**Arshad Qamar**

Consultant Trauma and Orthopedic Surgeon  
South City Hospital & Dr. Ziauddin Hospital  
Karachi, Pakistan



**Maha Ashraf**

Postgraduate and IP & Licensing Intern  
Stem Cells and Regenerative Therapies  
King's College London, UK



**Hadi Javan**

Research Fellow, Selzman Laboratory Research  
Nora Eccles Harrison CVRTI  
University of Utah School of Medicine, Utah, USA

# Pre and Post Conference CME Activities

## **CME Activity#1**

### **Workshop on Basics of Stem Cells in Surgery**

**Directors:** Sheerien Rajput, Azhar Hussain & Hammad Hassan

**Day/ Date:** Wednesday, February 15, 2023

**Time:** 09:00am – 05:00pm (Pakistan Time; GMT +5)

**Venue:** CRM Conference Room, Juma Building, AKU

## **CME Activity#2**

### **Workshop on CRISPR CAS9 Genome Editing**

**Directors:** Ambrin Fatima, Azhar Hussain & Irfan Hussain

**Day/ Date:** Thursday, February 16, 2023

**Time:** 09:00am – 05:00pm (Pakistan Time; GMT +5)

**Venue:** ML, Medical College, AKU

## **CME Activity#3**

### **Workshop on Mesenchymal Stem Cells in Ischemic Heart Diseases: Regeneration of Heart Cells that Beat back to the Rhythm**

**Directors:** Shiraz Hashmi & Azhar Hussain

**Day/ Date:** Friday, February 17, 2023

**Time:** 09:00am – 04:30pm (Pakistan Time; GMT +5)

**Venue:** MDL, Medical College, AKU

## **CME Activity#4**

### **Workshop on Induced Pluripotent Stem Cells (iPSCs): Reprogramming and Applications**

**Directors:** Ambrin Fatima, Salma Jahan & Azhar Hussain

**Day/ Date:** Friday, February 17, 2023

**Time:** 09:00am – 04:30pm (Pakistan Time; GMT +5)

**Venue:** CRM Conference Room, Juma Building, AKU

### **CME Activity#5**

#### **Workshop on Stem Cells Harvesting from Adipose Tissue**

**Directors:** Fazlur Rahman, Zia ul Islam & Safdar Ali Shaikh

**Day/ Date:** Friday, February 17, 2023

**Time:** 09:00am – 01:00pm (Pakistan Time; GMT +5)

**Venue:** Plastic Surgery Consulting Clinic, Jenabai Building, AKU

### **CME Activity#6**

#### **Seminar on Dental Stem Cells Role in Medicine and Dentistry**

**Director:** Robia Ghafoor

**Day/ Date:** Friday, February 17, 2023

**Time:** 09:00am – 01:00pm (Pakistan Time; GMT +5)

**Venue:** Auditorium, AKU

### **CME Activity#7**

#### **3rd Fundamentals of Surgical Research Course**

**Organised by:** Association of Academic Surgery

**Day/ Date:** Monday, February 20, 2023

**Time:** 09:00am – 04:00pm (Pakistan Time; GMT +5)

**Venue:** Centre for Innovation in Medical Education (CIME), AKU

### **CME Activity#8**

#### **An Introduction to Stem Cells Biology: Applications and Future Prospects**

**Organised by:** Surgery Interest Group (SIG) & Neurosciences Interest Group (NSIG)

**Day/ Date:** Friday, February 17, 2023

**Time:** 09:00am – 01:00pm (Pakistan Time; GMT +5)

**Venue:** Anatomy and Surgery Learning Studio (ASLS), AKU

## **Registration and Further Information**

**Website:** [www.aku.edu/aasc](http://www.aku.edu/aasc)

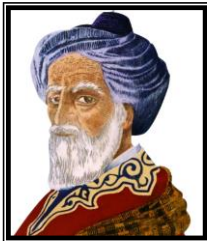
# Orations

## Ali al-Ḥusayn Ibn-e-Sina



Ali al-Ḥusayn Ibn-e-Sina, also known as Avicenna was a Persian polymath who is regarded as one of the most significant thinkers and writers of the Islamic Golden Age. Regarded as the Father of Medicine, his most famous works are The Book of Healing – a philosophical and scientific encyclopaedia, and a five-volume medical encyclopaedia: The Canon of Medicine which became a standard medical text at many universities and remained in use as late as 1650. Besides philosophy and medicine, Avicenna's corpus includes writings on astronomy, alchemy, geography and geology, psychology, Islamic theology, logic, mathematics, physics and poetry.

## Abu al-Qasim al-Zahrawi



Abu al-Qasim al-Zahrawi, also known as Albucasis, is considered the Father of Surgery. His outstanding contribution to medicine is his encyclopaedic work The Kitab Al-Tasrif, a long and detailed work in thirty treatises. The book contains the earliest pictures of surgical instruments and of all the contents of this landmark publication, the part on surgery became the most famous and had by far the greatest influence. In it, he developed all aspects of surgery and its various branches, including ophthalmology, ear, nose, and throat, head and neck, general surgery, obstetrics and gynaecology, military medicine, urology, and orthopaedics. This was a standard text well into the 1700s and was taught to medical students at major universities in Europe until the late 1800s.

## Ibn Zakariya al-Razi



Ibn Zakariya al-Razi, also known by his Latinized name Rhazes. al-Razi was considered a shaikh, an honorary title given to one entitled to teach and surrounded by several circles of students. al-Razi's medical works and ideas became known among medieval European practitioners and profoundly influenced medical education in the Latin West. Some volumes of his work Al-Mansuri, namely "On Surgery" and "A General Book on Therapy", became part of the medical curriculum in Western universities. Al-Razi was one of the world's first great medical experts. He wrote more than 224 books on various subjects. His most important work is the medical encyclopedia known as Al-Hawi fi al-Tibb, known in Europe as Liber Continens. He is considered the father of psychology and psychotherapy.

# **Inauguration Ceremony**

**Friday February 17, 2023**

**05:00pm – 07:00pm (Pakistan Time; GMT +5)**

**Venue: Auditorium, AKU**

**Inauguration Ceremony**  
**Friday February 17, 2023 | 05:00pm - 07:00pm**  
**Auditorium, AKU**

**Programme**

05:00pm - 05:05pm

**Opening Remarks by Conference Chair**

M. Fazlur Rahman

05:05pm - 05:10pm

**Welcome Address by Scientific Chair**

**Role of Stem Cells in Surgery**

Syed Ather Enam, SI

05:10pm - 05:35pm

**Ali al-Husayn Ibn-e-Sina Oration**

**Chief Guest:** Atta-ur-Rahman, FRS NI HI SI TI

05:35pm - 05:45pm

**Address by President, AKU**

Sulaiman Shahabuddin

05:45pm - 05:55pm

**Address by Chair, Department of Surgery, AKU**

Saleem Islam

05:55pm - 06:05pm

**Address by Dean, Medical College, AKU**

Adil Haider

06:05pm - 06:15pm

**Address by Vice Provost, Research, AKU**

Salim Virani

06:15pm - 06:35pm

**Abu al-Qasim al-Zahrawi Oration**

Shahid Mahmood Baig, SI

06:35pm - 06:55pm

**A Tribute to Dr. Amir Shariff**

Friend, Mentor, & Alumni

06:55pm - 07:00pm

**Closing Remarks, Conference Co-Chair**

Abida Sattar

07:00pm

**Dinner**

Venue: Male Hostel Lawn, AKU

# **Scientific Programme**

**Saturday & Sunday, February 18-19, 2023**  
**Venue: Auditorium, AKU**

**Day 1**  
**Saturday, February 18, 2023**

**Session One**

Saturday, February 18, 2023 09:00am – 11:00am (Pakistan Time; GMT +5) Chair: Saulat Fatimi   Co-Chair: Farhan Raza Khan			
Time	Duration	Title	Faculty
09:00am – 09:20am	20 mins	Genomic insights into human brain development, evolution and disease	Arnold Kriegstein
09:20am – 09:40am	20 mins	Stem cells in pain management	Davis C. Thomas
09:40am – 10:00am	20 mins	Ethical and legal considerations in surgery	Rose M. Carter
10:00am – 10:20am	20 mins	Modeling mechanisms of diabetes type 2 in the liver – a human iPSC-based microphysiological approach	Marko Groeger
10:20am – 10:40am	20 mins	Q/A	

<b>Ibn Zakariya al-Razi Oration</b> Saturday, February 18, 2023   10:40am – 11:00am (Pakistan Time; GMT +5)			
Time	Duration	Title	Faculty
10:40am – 11:00am	20 mins	Clinical applications of adipous tissue derived stem cells in plastic, aesthetic and orthopedic surgery	Marita Eisenmann-Klein

11:00am – 11:30am	30 mins	Tea + Refreshments	
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**Session Two**

Saturday, February 18, 2023 11:20am – 01:00pm (Pakistan Time; GMT +5) Chair: Rumina Hasan   Co-Chair: Tashfeen Ahmed			
Time	Duration	Title	Faculty
11:30am – 11:45am	15 mins	Stem cells strategies for treatment of liver fibrosis	Azra Mehmood
11:45am – 12:00pm	15 mins	3D-Bioprinting stem cells; tissue and organ regeneration	Sheerien Rajput
12:00pm – 12:15pm	15 mins	Cell and tissue engineering approaches for cardiac repair and regeneration	Asmat Salim
12:15pm – 12:30pm	15 mins	Controlling melanocytic activity: No more a dream with Mesenchymal stem cells	Afzaal B. Bajwa
12:30pm – 12:45pm	15 mins	Challenges and opportunities for the clinical translation of stem cell engineered vascular tissue substitutes in vascular surgery	Mahin G. Ahmed
12:45pm – 01:00pm	15 mins	Q/A	
01:00pm – 02:00pm	60 mins	Lunch and Prayer Break	



**Session Three**  
**A Model of Stem Cells Research in Turkey**

**Saturday, February 18, 2023**  
**02:00pm – 04:15pm (Pakistan Time; GMT +5)**  
**Moderators: Sohail Dogar and Saqib Qazi**

Time	Duration	Title	Faculty
02:00pm – 02:20pm	20 mins	Origin of Stem Cells	Ceren Ozel
02:20pm – 02:40pm	20 mins	Bone Marrow, Wharton Jelly, Amniotic Fluid derived Mesenchymal Stem Cells Isolation Technics	Merve Nur Soykan
02:40pm – 03:00pm	20 mins	Stem Cells Harvesting Technics and Characterization	Burcugul Altug Tasa
03:00pm – 03:20pm	20 mins	Cryopreservation Technics and Storage	Bahar Demir Cevizlidere
03:20pm – 03:40pm	20 mins	Quality Management System of Mesenchymal Stem Cells Production Processes for Clinical Use	Irem Yilmaz Basaran
03:40pm – 04:00pm	20 mins	Approaches for Clinical Application of Mesenchymal Stem Cells: Inherited Disease and Malformation	Suleyman Gokhan Kara
04:00pm – 04:15pm	15 mins	Q/A	

04:15pm – 04:30pm	15 mins	Tea + Refreshments	
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**Session Four**

**Saturday, February 18, 2023**  
**04:30pm – 06:15pm (Pakistan Time; GMT +5)**  
**Chair: Shehab Beg | Co-Chair: Rizwan Haroon**

Time	Duration	Title	Faculty
04:30pm – 04:45pm	15 mins	Haematopoietic stem, cell and gene therapies what's past is prologue	Waseem Qasim
04:45pm – 05:00pm	15 mins	Blood in a dish	Hammad Hassan
05:00pm – 05:15pm	15 mins	Ethical assessment of the human embryonic stem cell research	Ilhan Ilkilic
05:15pm – 05:30pm	15 mins	Induced pluripotent stem cells to model neurodevelopment in a dish	Ambrin Fatima
05:30pm – 05:45pm	15 mins	Guardian spirit (Shugoshin) and destruction complex: From cell cycle to Wnt signaling	Ahmed A. Rattani
05:45pm – 06:00pm	15 mins	Improving cancer detection and monitoring using liquid biopsies	Muhammed Murtaza
06:00pm – 06:15pm	15 mins	Q/A	

**Surgery Alumni Dinner**

**Saturday, February 18, 2023 | 06:30pm – 08:30pm**  
**Venue: Male Hostel Lawn, AKU**

**Day 2**  
**Sunday, February 19, 2023**

**Session Five**  
**Student Breakfast Session with National and International Faculty**

Sunday, February 19, 2023  
07:30am – 08:30am (Pakistan Time; GMT +5)  
Venue: Male Hostel Lawn, AKU

**Session Six**  
**Student Session**

Sunday, February 19, 2023  
08:30am – 10:30am (Pakistan Time; GMT +5)  
Venue: AKU Auditorium

Time	Duration	Title	Faculty
08:30am – 08:35am	05 mins	Welcome Address	Students
08:35am – 08:55am	20 mins	A promising career and opportunities for medical students in stem cells research	Marita Eisenmann-Klein
08:55am – 09:15am	20 mins	Stem cells therapies: A revolution in medicine for a developing country?	Maha Ashraf
09:15am – 09:35am	20 mins	Recent advancements in stem cell research: What can we expect?	Aftab Ahmad
09:35am – 10:20am	45 mins	<u>Panel Discussion:</u> Advent of Stem Cells in Surgery: Our Past, Present and Future <u>Panelists:</u> Faiz Bhora, Arshad Qamar, Hadi Javan	
10:20am – 10:30am	10 mins	Closing Remarks	Students

**Session Seven**  
**Poster Session**

Sunday, February 19, 2023  
09:00am – 10:30am (Pakistan Time; GMT +5)  
Venue: Auditorium Poolside, AKU

Moderator: Muhammad Nazim  
Judges: Afzaal B. Bajwa, Irfan Khan, Mahin G. Ahmed, Hammad Ather, Humayun Siddiqui

**Session Eight**  
**Free Paper Session**

Sunday, February 19, 2023  
09:00am – 10:30am (Pakistan Time; GMT +5)  
Venue: Lecture Hall# 3, AKU

Moderator: Zia ur Rehman  
Judges: Azra Mehmood, Mustehsan Bashir, Asmat Salim, Shahzad Shamim, Hasanat Sharif

10:30am – 10:45pm	15 mins	Tea + Refreshments
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### Session Nine

**Sunday, February 19, 2023**  
**10:50am – 12:30pm (Pakistan Time; GMT +5)**  
**Chair: Sadaf Khan | Co-Chair: Safdar Ali Shaikh**

Time	Duration	Title	Faculty
10:45am – 11:30am	45 mins	<u>Panel Discussion</u> Ethical and legal considerations in stem cells research <u>Moderator:</u> Azhar Hussain & Nida Wahid <u>Panelists:</u> Sohail Kassamali, Rashid Jooma, Irfan Khan, Mustehsan Bashir, Azra Mehmood	
11:30am – 11:45am	15 mins	Stem cells for spinal cord injury - Do we have a cure	Rashid Jooma
11:45am – 12:00pm	15 mins	Mesenchymal stem cells: An alternative approach to manage low back pain	Irfan Khan
12:00pm – 12:15pm	15 mins	Adipose tissue derived stem cells as an antiaging therapy	Mustehsan Bashir
12:15pm – 12:30pm	15 mins	Stem cells strategies for wound repair	Azra Mehmood

### Keynote Lecture

Time	Duration	Title	Faculty
12:30pm – 12:50pm	20 mins	Embryonic stem cells research: Ethical and legal issues	Helena Pereira de Melo

01:00pm – 02:00pm	60 mins	Lunch and Prayer Break	
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### Keynote Lecture

Time	Duration	Title	Faculty
02:00pm – 02:20pm	20 mins	Why commercialise stem cell research	Catherine Prescott

### Session Ten

**Sunday, February 19, 2023**  
**02:20pm – 03:30pm (Pakistan Time; GMT +5)**  
**Chair: Masood Umer | Co-Chair: Ziaur Rehman**

Time	Duration	Title	Faculty
02:20pm – 02:35pm	15 mins	Novel approaches of molecular targeting in relapsed and refractory leukemia	Afsar Mian
02:35pm – 02:50pm	15 mins	Mesenchymal stem cells in GvHD - battle of the T cells	Natasha Ali
02:50pm – 03:05pm	15 mins	From pluripotent stem cells to neuron - The promise of human organoids in the embryonic brain development and discovery	Salma Jahan
03:05pm – 03:20pm	15 mins	Pluripotent stem cells in clinical setting - new developments and overview of current status	Dusko Ilic
03:20pm – 03:30pm	10 mins	Q/A	

**Session Eleven**  
**3rd Dean's Quiz Challenge**

**Sunday, February 19, 2023 | 03:30pm - 04:30pm (Pakistan Time; GMT +5)**

Institutions:

Liaquat National Hospital, The Indus Hospital, Dow University of Health Sciences,  
Patel Hospital, Dr. Ziauddin Hospital, Jinnah Postgraduate Medical Center, PNS Shifa, Aga Khan University  
Moderators: Shahid Sami, M. Rizwan Khan and M. Shahzad Shamim

**Session Twelve**  
**Closing Ceremony**

**Sunday, February 19, 2023**  
**04:30pm - 04:45pm (Pakistan Time; GMT +5)**

<b>Time</b>	<b>Duration</b>	<b>Title</b>	<b>Faculty</b>
04:30pm - 04:35pm	05 mins	Winner Best Institute - Dean's Quiz	M. Rizwan Khan
04:35pm - 04:40pm	05 mins	Best poster award & Best free paper award	Sana Zeeshan Syed M. Nazim
04:40pm - 04:45pm	05 mins	Certificates to Partners and Sponsors	M Fazlur Rahman
04:45pm - 04:50pm	05 mins	Vote of Thanks by Conference Co-Chair	Abida Sattar
04:50pm - 05:00pm	10 mins	Conference Certificates for Participants	Auditorium Lobby

**Session Thirteen**  
**Conversations with Surgeons (Virtual)**  
**Organised by Surgery Interest Group (SIG)**

**Sunday, February 19, 2023 | 08:00pm - 09:00pm (Pakistan Time; GMT +5)**

"Conversations with Surgeons" will serve as a chance for medical students to meet esteemed surgeons and seek advice regarding their medical careers and research

# **Free Paper Session**

*(Session Eight)*

**Sunday, February 19, 2023**

**09:00am - 10:30am (Pakistan Time; GMT +5)**

**Venue: Lecture Hall# 3, AKU**

**OAASC-01**

**Mesenchymal stem cells; An alternative approach to manage low back pain**

**Irfan Khan**

*Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi*

**OAASC-02**

**Implementation of transfer learning for the segmentation of human mesenchymal stem cells - A validation study**

**Niha Adnan, Fahad Umer, Shahzaib Malik**

*Aga Khan University, Karachi*

**OAASC-03**

**Challenges in retinal stem cells transplantation (RSC) in a lower middle-income country - A survey**

**Sehrish Nizar Ali Momin, Hina Israr Ahmed Qazi, Wardah Moazzam, Shaukat Ali Chhipa**

*Department of Ophthalmology and Visual Sciences, Aga Khan University, Karachi*

**OAASC-04**

**Stem cells - The next therapeutic frontier from patient selection to mechanism of action and results - A five years' experience**

**Faisal Naveed, Edgar Suter**

*Vibrant Health Care, Scottsdale AZ, USA*

**OAASC-05**

**Cardioprotective role of JAG1 transfected mesenchymal stem cells in rat models of myocardial infarction**

**Hafiz Muhammad Usman, Irfan Khan, Asmat Salim, Anwar Ali**

*Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi*

**OAASC-06**

**Engineered mesenchymal stem cells isolated exosomes as a silver bullet for temozolomide-resistant glioblastoma multiforme treatment**

**Fawad Ur Rehman, Afsar Ali Mian, Meng Zheng, Shi Bingyang**

*Aga Khan University, Karachi and Henan-Macquarie University, China*

**OAASC-07**

**Generation and characterization of a human induced pluripotent stem cell line from a healthy female donor of Pakistani origin**

**Hijab Zahra, Shagufta Rehmat, Muhammad Jameel, Ambrin Fatima**

*Aga Khan University, Karachi*

**OAASC-08**

**Assessment of MSC compatibility and skin regenerative capability of decellularized human fetal membrane**

**Haadia Tauseef, Kainat Ahmed, Irfan Khan, Asmat Salim, Omair A. Mohiuddin**

*Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi*

**OAASC-09**

**The landscape of stem cells research in Pakistan**

**Sujjawal Ahmad, Sana Zeeshan, Azhar Hussain, Rumina Hassan, Kulsoom Ghias, Afsar Mian, Syed Ather Enam**

*Aga Khan University, Karachi*

**OAASC-10**

**Genetic modification of UC-MSCs for oligodendrocyte lineage differentiation by Olig2 and Myt1L transcription factors**

**Ifrac Fahim, Irfan Khan, Anwar Ali**

*P.C.M.D. and I.C.C.B.S., University of Karachi*

**OAASC-11**

**Generation of human induced pluripotent stem cell line from patients derived fibroblasts**

**Karim Ruknuddin Areeb Ahmed, Sadia Habib, Mohammed Jameel, Shagufta Rehmat, Naveed Malik, Afsar Mian, Jahan Salma**

*Aga Khan University Karachi and National Institute for Biotechnology and genetic Engineering, Faisalabad, Pakistan*

# Poster Session

*(Session Seven)*

**Sunday, February 19, 2023**

**09:00am - 10:30am (Pakistan Time; GMT +5)**

**Venue: Auditorium Poolside, AKU**



**PAASC-01**

**Biobanking of human teeth for stem cells storage: Preserving stem cells for future needs**

**Saqib Habib, Shahrukh Ali khan, Aqeel Ahmad, Farhan Raza Khan**

*Aga Khan University, Karachi*

**PAASC-02**

**Role of stem cells in the treatment of osteoarthritis - A review of literature**

**Mohammad Mustafa, Arslan Ahmed Abro, Noman Khan, Muhammad Kazim Rahim Najjad,  
S. Shahid Noor**

*Liaquat National Hospital, Karachi*

**PAASC-03**

**Stem cells on YouTube: National vs International content**

**Fizzah Arif, Mohammad Khozema Safri, Mohammad Fazlur Rahman**

*Aga Khan University, Karachi*

**PAASC-04**

**Comprehensive targeted treatment options available for Breast cancer stem cells; A literature review of last 10 years developments**

**Lubna Mushtaque Vohra, Mehwish Mooghal, Wajiha Khan, Hassan Sohail, Sana Zeeshan**

*Aga Khan University and Dow University of Health Sciences, Karachi*

**PAASC-05**

**Knowledge and awareness of dental stem cells among dental healthcare professionals - a cross-sectional study**

**Hafsa Qabool, Rashna Hoshang Sukhia, Jaweriyah Qabool, Aqeel Ahmed**

*Aga Khan University, Karachi*

**PAASC-06**

**Leap into fetal surgery; in utero placental mesenchymal stem cell therapy, a contemporary approach to treating myelomeningocele**

**Muhammad Osama Siddiqui, Haya Shahzad, Insa Binte Anwar**

*Liaquat National Hospital and Medical College*

**PAASC-07**

**The implication of stem cells therapy in cleft lip and palate and other craniofacial anomalies: A literature review**

**Leelan Kanwal, Mariam Khawaja, Wafa Idrees, Rashna H. Sukhia, Mubassar Fida**

*Aga Khan University, Karachi*

**PAASC-08**

**Mesenchymal stem cells and its translation into clinical orthodontics: current trends and future perspectives**

**Aqeel Ahmed, Hafsa Qabool, Saqib Habib, Mubassar Fida, Syeda Gulrukh Shah**  
*Aga Khan University, Karachi*

**PAASC-09**

**Implication of stem cells and platelet rich plasma in otolaryngology, head and neck surgical procedures**

**Muhammad Fazal Hussain Qureshi, Soubia Akhtar, Shayan Khalid Ghaloo, Muhammad Wasif, Hamdan Ahmed Pasha, Rahim Dhanani**  
*Dr Ziauddin University Hospital and Aga Khan University, Karachi*

**PAASC-10**

**Dental stem cells research from bench to bedside-ethics and legislation in lower middle-income countries: A narrative review**

**Meisha Gul, Robia Ghafoor**  
*Bahria University Health Sciences and Aga Khan University, Karachi*

**PAASC-11**

**The implication of stem cells in direct pulp capping: Where do we stand?**

**Madiha Khan, Zainab Haji, Robia Ghafoor**  
*Aga Khan University, Karachi*

**PAASC-12**

**Diagnostic and prognostic role of stem cell biomarkers in oral squamous cell carcinoma; A systematic review**

**Faiza Ali, Tania Arshad Siddiqui, Rashna Hoshnag Sukhia, Ayesha Maqsood, Dinaz Ghandhi**  
*Foundation University College of Dentistry and Hospital, Altamash Institute of Dental Medicine and Aga Khan University, Karachi*

**PAASC-13**

**Clinical applications and novel approaches in stem cell: an insight to dental pulp regeneration**

**Syeda Abeerah Tanveer, Zainab Haji, Robia Ghafoor**  
*Aga Khan University, Karachi*

**PAASC-14**

**Application of mesenchymal stem cells in bio-root formation and whole tooth regeneration: A literature review**

**Karshma Devi Hindu, Bibi Fatima, Farhan Raza Khan**  
*Aga Khan University, Karachi*

**PAASC-15**

**Stem cells for spinal cord injury - Do we have a cure?**

**Rashid Jooma, Saqib Kamran Bakhshi**

*Aga Khan University, Karachi*

**PAASC-16**

**Stem cells mediated pulp regeneration - Clinical potential ahead**

**Robia Ghafoor, Faiza Yousuf, Madiha Khan**

*Aga Khan University, Karachi*

**PAASC-17**

**Role of stem cells in maxillofacial defects**

**Robia Ghafoor, Tahoorah Yousuf, Madiha Khan**

*Aga Khan University, Karachi*

**PAASC-18**

**Role of stem cells in periodontology regeneration**

**Robia Ghafoor, Hashima Bibi, Madiha Khan**

*Aga Khan University, Karachi*

**PAASC-19**

**Role of stem cells therapy in multiple sclerosis; has it shown promise?**

**Sabila Siddiqui, Shahzaib Khan, Mishal Shan Siddiqui, Aimen Nizami, Ayman Ahmed,  
Asad Ali**

*Dubai Medical College for Girls, Karachi Medical and Dental College, Dow Medical College, Karachi*

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