

DEPARTMENT OF BIOLOGICAL AND BIOMEDICAL SCIENCES

Believe

Become

Succeed

Message from the Chair

The poet Maya Angelou once said, “I can be changed by what happens to me. But, I refuse to be reduced by it.” How we have all been changed by Covid-19! Was there ever a time before it? Will it ever be firmly in our rearview mirrors? Even as we grapple with this, as we pray for those who have been lost and those who have suffered in the pandemic, we stand resolute that we won’t be reduced by this crisis. As we enter the tail end of 2021, I would like to take a

moment to appreciate everyone who has worked so diligently in these challenging times. In an ever-shifting landscape, BBS has delivered on its commitment to quality research and education. Many BBS faculty members have been the proud recipients of prestigious awards, accolades and recognition. The entire department has banded together in the face of numerous changes and constant uncertainties - some of the outstanding results are highlighted here. The output of our department-wide efforts to enhance research and scholarship are reflected in the publications that continue to grow in number and impact, the workshops held, and the presentations given, among other initiatives. I hope you will take a moment to read this newsletter and reach out to commend those who continue to make a difference.

Warm regards,
Kulsoom

September
2021



AWARDS & RECOGNITION



Dr Kulsoom Ghas

**The Feerasta Family
Endowed Chair**



Dr Syed Hani Hassan Abidi

**The Akbar Ali Habib Bandeali
Endowed Professor**



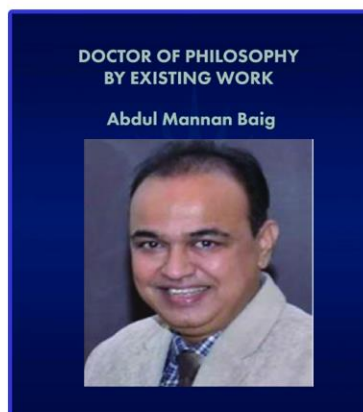
Dr Rehana Rehman

**The Bahadur Ali Kamruddin Jessani
Endowed Professor**

AWARDS & RECOGNITION



Dr Zehra Jamil received Fellowship from the
Higher Education Academy (UK)



Dr Abdul Mannan Baig was awarded a PhD by
University of Sunderland

AWARDS & RECOGNITION

2021 Convocation Award Recipients



Dr Rozmeen Akbar
Early Career
Teaching Award



Dr Fareena Bilwani
Excellence in
Teaching Award



Dr Sadia Fatima
Team-Based Collaborative
Award for Teaching
(with Dr Kausar Jabeen and Dr Romana
Idress)



Dr Zuhair Yusuf
Team-Based Collaborative
Award for Teaching
(with Dr Unab Khan, Dr Urooj Kashif,
Dr Samar Zaki, Dr Naveed Juman,
Dr Khalid Samad and Dr Sana Saeed)

PROMOTIONS



Dr Bushra Chaudhry
to Associate Professor

Dr Abdul Mannan Baig
to Assistant Professor



FROM THE HUB



A training-lecture series was conducted by Dr Ambrin Fatima and arranged by Ms Asra Khan and Dr Azhar Hussain to introduce and provide skills training to BBS laboratory staff on human genetic disorders and their diagnosis, *in-vitro* disease modelling, Sanger sequencing and its data analysis, *in silico* prediction of variants using different tools such as snap gene and sequencer and *in silico* cloning.



Dr Rehana Rehman presented her research group's work on 'Oxidative Stress and Metformin, an *in-vitro* study on Serum and Primary Human Granulosa Cell Cultures' at the 37th ESHRE conference. Co-authors: Dr Faiza Alam, Dr Nida Farooqi, Dr Farrukh Jehan and Dr Syed Hani Abidi.

FROM THE HUB



#SCOD4.5: SCOD - Curriculum - General

SCOD4.5.5 Basic Research Workshops for Medical Students: Strengthening Grassroots for Research in Developing Countries (7389)

AUTHOR(S):
Russell Seth Martins, The Aga Khan University, Pakistan*
Sadia Fatima, Aga Khan University, Pakistan
Huma Shoukat Ali, Aga Khan University, Pakistan
Mohammad Hassan Raza Raja, Aga Khan University, Pakistan
Zehra Naseem, Aga Khan University, Pakistan
Maria Fatima Ali, Aga Khan University, Pakistan

Mr Russell Seth Martins (MBBS Class of 2021) gave an oral presentation on ‘Basic Research Workshops for Medical Students’ at the Virtual Conference organized by the Association for Medical Education in Europe (AMEE). Co-authors: Dr Huma Shoukat Ali, Ms Zehra Naseem, Mr Mohammad Hassan Raza Raja, Ms Maria Ali. Faculty mentor: Dr Sadia Fatima.



Faculty to Faculty Mentorship Workshop – Basic

Thursday, July 01, 2021
10:00 am to 12:30 pm

Department for Educational Development (DED) offers online Faculty to Faculty Mentorship Workshops for the Faculty Development of Health Sciences from Aga Khan University, AKU.

Workshop Objectives:

- Identify the roles and responsibilities of the faculty mentor and faculty mentee
- Promote the establishment of a productive mentorship
- Identify the issues of mentoring relationship
- Identify the roles and responsibilities in mentoring relationship
- Changing situations in the mentoring process
- Develop final year mentee projects

Target Audience:

- Faculty from Aga Khan University, AKU

Facilitators:


- Dr. Muhammad Faris, Associate Professor, Department of Educational Development, AKU
- Dr. Muhammad Ali Zuberi, Associate Professor, Department of Educational Development, AKU
- Dr. Zahara Zehra, Associate Professor, Department of Educational Development, AKU

Information and Registration:
Registration is free. Registration deadline is Friday, June 25, 2021
Please send online registration form [HERE](#)

For all further information please contact the Department for Educational Development
AKU | 92 21 34822153 | ded@aku.edu

The workshop is accredited by the Association for Medical Education in Europe (AMEE).
AMEE | www.amee.org

Dr Rehana Rehman and Dr Saara Muddasir attended a virtual workshop on ‘Faculty to Faculty Mentorship’ offered by Department for Educational Development-AKU.



Endometriosis, infertility and MicroRNA's: A review

Muhammad Hassan Raza Raja, Nida Farooqui, Muhammad Zubair, Muhammad Ashraf, Arfa Azhar, Decemina Saig, Shama Bador, Rehana Rehman

An article published by an AKU research group comprising of Dr Nadeem Zuberi, Dr Rehana Rehman, Dr Arfa Azhar, Ms Mussarat Ashraf, Ms Nida Farooqui and AKU medical student Mr Muhammad Hassan Raza Raja was highlighted in Endo News.

FROM THE HUB

Introducing Team-Based Learning in Graduate Courses

Dr Rehana Rehman, Dr Sadia Fatima, Dr Satwat Hashmi

Team-Based Learning (TBL) is an active instructional strategy used in small groups that provides students chances to apply theoretical knowledge through a series of activities that include individual work, teamwork and immediate provision of feedback (1,2). This strategy is frequently offered in the undergraduate medical curriculum to improve students' learning and performance in the examinations in a number of institutions, including AKU.

The effective feedback acquired from medical students motivated us to introduce TBL in a graduate Scientific Writing Course. The concepts covered were Research Misconduct, Conflict of Interest and Ethics in Publication. The significant case and application exercises were designed with a step-wise approach to ensure guided self-preparation with pre-reading materials, an individual readiness assurance test and identical test being discussed within groups of 5 to 7 learners (group readiness assurance test). Students were given a chance to appeal and facilitators gave immediate feedback and clarified the misconcepts. The feedback obtained from students affirmed that the activity helped them to become actively engaged, promoted deep understanding of concepts and facilitated teamwork both inside and outside of the classroom.

1. Burgess, A., Bleasel, J., Haq, I., Roberts, C., Garsia, R., Robertson, T., & Mellis, C. (2017). Team-Based Learning (TBL) in the Medical Curriculum: Better than PBL? *BMC Med Edu*, 17(1), 243.
2. Parmelee, D., Michaelsen, L. K., Cook, S., & Hudes, P. D. (2012). Team-Based Learning: a Practical Guide: AMEE Guide no. 65. *Med Teach*, 34(5), e275-e287.

THE VIRTUAL SHIFT

Digital Teaching and Learning in Higher Education Course August 23-27, 2021



Dr Tasneem Anwar (AKU-IED) and Dr Syeda Sadia Fatima (AKU-MC) co-designed and co-facilitated a city wide online course for higher education faculty. The course was designed to encourage participants to engage with the theoretical aspects of digital teaching and learning and demonstrate their understanding through various hands-on and minds-on activities. The course was very well appreciated by the participants, who shared that by attending this course, they understood the importance of course alignment and practical examples of using active learning during digital T&L, such as use of videos and the flipped classroom approach. They shared that the course has motivated them to try new tools and strategies and become agents of community of practice.



Organiser
Institute for Educational Development,
Pakistan
Information
Please write to igd.pdck@aku.edu

**Digital Teaching and Learning in
Higher Education**

August 23-27, 2021 | 3:00-5:00 pm | Online Course

Objectives
This course will help you:

- Reflect on the digital teaching and learning practices and take purposeful decisions for integration of technology
- Examine and use active learning for interactive digital teaching and learning
- Design teaching plans for Flipped Learning and Team-Based Learning
- Apply the best practices of digital teaching and learning to design learning and assessment tasks

Who should attend

- Anyone who is teaching undergraduate or graduate courses at higher Education Institutions

Course Facilitators

- Dr Tasneem Anwar, Assistant Professor and Lead Faculty, Virtual Learning Environment, AKU-IED
- Dr Sadia Fatima, Assistant Professor, Department of Biological and Biomedical Sciences, AKU-MC

REGISTER NOW!

Deadline for registration
August 19, 2021

FEES*

EARLY BIRD DISCOUNT
(till August 5, 2021)

- National: PKR 6625
- International: USD 80

Group discount

- National: PKR 6720
- International: USD 76

Regular fee

- National: PKR 7,350
- International: USD 84

*Inclusive of applicable Saudi Sales Tax

**Key Takeaways and
Aspiration for Classroom Implementation**

**Alignment between
curriculum, pedagogy and
tools**

Plan some of my lessons this
semester using this alignment

**Use of Videos and Flipped
Classrooms**

Improve and modify use of
videos and flipped classrooms
for effective active learning

Team Based Learning

Apply TBL with its sequenced
steps
I plan to have an orientation
session tomorrow for TBL, and
if all goes well, will have my
first TBL session on Monday

**Educational Technology with
Active Learning**

Use web tools based on
constructivism theory for the
active learning

**Digital teaching and learning
requires planning**

Inculcating different
strategies during planning our
lessons
by exploring it and
experimenting and applying it

IN THE SPOTLIGHT

Celebrating 19 Years at BBS with Dr Bushra Chaudhry



One of the biggest privileges of working at AKU is that we are surrounded by faculty and staff members who have diligently served the organization for many years, sometimes since the inception of the university or the department they are with. In this feature, we are pleased to share our interview with one of our current longest-serving faculty members whose contributions to education, research and department activity have been commendable over the years.

Dr Bushra Chaudhry, Associate Professor, looks back on her journey with BBS that is now close to encompassing two decades.

Dr Chaudhry's long list of accomplishments include being the first person to establish genetic engineering experiments in Pakistan at CEMB laboratories, laying the foundation work for the agricultural industry to protect field crops from the onslaught of fungal infection, as well as a multitude of other achievements in health sciences.

IN THE SPOTLIGHT

1. If you were to go back to 2002 and offer yourself some words of wisdom for the years ahead, what would those be?

Being a researcher in the field of health sciences, I would tell myself to remain associated with the clinicians and basic scientists as they keep themselves updated with clinical methods to remove disease sufferings from human subjects. I have always believed that research outcomes are best when you develop a team of enthusiastic researchers with various expertise, and I would advise my past self to focus on building that understanding as much as possible for the benefit of the scientific community in the future.

2. What are some moments in your teaching career that have stood out to you?

Throughout my career, I have had the privilege of training over 150 undergraduate medical students for research and a large number of MPhil and PhD students. My fondest memories are of witnessing the happiness and satisfaction of students when they learnt a new concept or skill. It brought me great pleasure to see my MPhil and PhD students practically implementing those skills in their own groups now and being designated senior academic positions in national and international institutions. It is very satisfying whenever I meet those fellows and they tell me they cherish the happy memories of their learnings in my group.

IN THE SPOTLIGHT

3. What aspects of your research do you consider to be the most important?

When I look at my research journey so far, I feel my work on protein engineering by making functional constructs for transgenic plant technology to create protection to field crops is the most important as it provided the foundation to the global community to apply this technology in different crops. Myco-pesticide lab scale production and formulation is another achievement. Moreover, my studies on genetics and the translational aspect of genes associated with diabetes, and how some genes can be used as therapeutic drugs is in progress and I hope will be another important contribution in the field of health and medicine in the near future.

4. What advice would you have for newcomers to BBS?

All newcomers are national pillars: they need to make BBS, AKU and Pakistan stronger. I ask them to be in high spirits and use the best of their abilities to work in a team structure with honesty and integrity. Learn problem-solving abilities and apply innovative ideas to achieve your own goals as well as the university's by establishing a cooperative and inclusive working environment. To students, they are the next generation of scientists and physicians and they need to stay curious, creative, focused and determined in their learning. Scientific work can be challenging to establish; they are required to be industrious to become knowledgeable and elite leaders.

IN THE SPOTLIGHT

5. What is one of your fondest moments from your career?

I have had the privilege of meeting quite a few scientists of high caliber, particularly some Nobel Prize winners. It was an honor for me to be able to interact with them and gain their advice in the field of science, and it kept me motivated to focus on what I could contribute to my country.

At AKU, I have truly enjoyed spending a part of my career in such a professional setting with the best standards in the country. It has been a privilege to work at enhancing the mission of AKU.

6. Any other words?

I believe in serving humanity and helping refine young minds. This will lead to larger rewards for all of us in the future.

Interview conducted by Ms Noorulain Salim

PUBLICATIONS

1. Baig AM. Targeting Neuroinvasion by SARS-CoV-2: Emerging Trends in Drug and Antibody Delivery to Combat COVID-19. *ACS Chem Neurosci*.2021;12(14):2555-2557. <https://doi.org/10.1021/acchemneuro.1c00372>.
2. Baig AM, Khaleeq A, Syeda H, Bibi N. Docking Prediction of Levodopa in the Receptor Binding Domain of Spike Protein of SARS-CoV-2. *ACS Pharmacol Transl Sci*. 2021;4(1):406-409. <https://doi.org/10.1021/acsptsci.1c00002>.
3. Baig AM, Khaleeq A, Syeda H. Docking Prediction of Amantadine in the Receptor Binding Domain of Spike Protein of SARS-CoV-2. *ACS Pharmacol Transl Sci*. 2020;3(6):1430-1433. <https://doi.org/10.1021/acsptsci.0c00172>.
4. Ali R, Jawed S, Baig M, Malik AA, Syed F, Rehman R. General Public Perception of Social Media, Impact of Covid-19 Pandemic, and Related Misconceptions. *Disaster Med Public Health Prep*. 2021;1-22. <https://doi.org/10.1017/dmp.2021.229>.
5. Shahid M, Khan S, Ashraf M, Mudassir AH, Rehman R. Male infertility: Role of Vitamin D and Oxidative Stress markers. *Andrologia*. 2021;00, e14147. <https://doi.org/10.1111/and.14147>
6. Rehman R, Jawaid S, Ali R, Noreen K, Baig M, Baig J. COVID-19 Pandemic Awareness, Attitudes, and Practices Among the Pakistani General Public. *Front Public Health*. 2021;9:588537. <https://doi: 10.3389/fpubh.2021.588537>.

PUBLICATIONS

7. Ashraf M, Kazmi DSU, Tariq H, Munir A, Rehman R. Association of Trinucleotide Repeat Polymorphisms CAG and GGC in Exon 1 of the Androgen Receptor Gene with Male Infertility: a Cross-sectional Study. *Turk J Med Sci.* 2020 (Epub ahead of print). <https://doi.org/10.3906/sag-2005-74>.

8. Ali R, Iqbal MUN, Rehman R, Khan TA. Association of Novel Stop Gained Leukemia Inhibitory Factor Receptor Gene (rs121912501) Variant, Leukemia Inhibitory Factor and Ovarian Steroids with Unexplained Infertility among Pakistani women. *Int J Clin Pract.* 2021;e14245. <https://doi.org/10.1111/ijcp.14245>.

9. Akram Z, Perveen R, Siddiqi HS, Hussain M, Imam S, Abrar H, Mahmood SM. Pharmacological Basis for the Antihypertensive Activity of *Grewia Asiatica* Fruit Extract. *Pak J Pharm Sci.* 2021;34(4).

10. Akbar I, Martins RS, Fatima SS. Student Research Mentorship Programme: A Novel Solution for Promoting Research in Medical School. *J Coll Physicians Surg Pak.* 2021;31(09):1135-1136. <https://doi.org/10.29271/jcpsp.2021.09.1135>.

11. Farhat S, Rehana R, Fatima SS. Flipped Laboratory Sessions using Video Vignette and Active Learning: A Hybrid Approach for Online Teaching. *J Coll Physicians Surg Pak.* 2021;31(09): 1139-1140. <https://doi.org/10.29271/jcpsp.2021.09.1139>.

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