

**DEPARTMENT OF
BIOLOGICAL AND
BIOMEDICAL
SCIENCES**

**ANNUAL REPORT
2020**



THE AGA KHAN UNIVERSITY

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Chair's Message



I am pleased to share the Annual Report for the Department of Biological and Biomedical Science (BBS). This report serves as a summary of the departmental activities conducted from January – December 2020.

BBS has been a proud part of Aga Khan University (AKU) for almost two decades. In April 2001, the merger of four independent disciplines led to the creation of one department. The departmental vision since inception has been to become a leading international center for biomedical research, training and education. BBS is uniquely positioned through its affiliation with the hospital and with expertise in basic sciences to tackle pressing health problems in a translational manner and its faculty is equipped to train and teach across programmatic levels. It has succeeded in the delivery of well-designed curriculum and cutting-edge research aligned with the University's thematic areas. All BBS activities are driven by the determination to achieve the overarching departmental goals of scholarship and research responsive to the needs of the country and to enhance the success of its students through transformative learning experiences.

The global pandemic presented unique challenges to the department's function. Despite significant changes at a personal and professional level, the innovation, dedication, and hard work shown by all has been truly commendable, and as a result of these efforts, the department has had significant successes throughout the year. After a thorough search by the Faculty Appointments Committee, research-active faculty members were recruited. New Vice Chairs for Research and Education were appointed following a rigorous internal process. Laboratory staff were appropriately re-designated with academic titles to reflect their role in both teaching and research. The Departmental Communications Committee published well-received newsletters sharing the departments activities with the institution at large. Importantly, the department monitored the first year's progress of its strategic plan and found that the majority of targets were met.

It is important to note that the accomplishments listed throughout this report would not have been achieved without the hard work and contributions of all members of the department. I look forward to our continued success as an integral part of the Medical College and institution.

Dr Kulsoom Ghias
Associate Professor and Chair
Department of Biological and Biomedical Sciences

BBS Personnel

Faculty Members

Dr Kulsoom Ghias	Associate Professor and Chair
Dr Perwaiz Iqbal	Professor Emeritus
Dr HR Ahmad	Professor
Dr Shahid Mahmood Baig	Professor
Dr Syed Hani Abidi	Associate Professor and Vice Chair, Research
Dr Satwat Hashmi	Associate Professor and Vice Chair, Education
Dr Rehana Rehman	Associate Professor
Dr Najeeha Iqbal	Associate Professor (Joint appointee)
Dr Naseer Ahmed	Assistant Professor
Dr Bushra Amin	Assistant Professor
Dr Fazal Arain	Assistant Professor
Dr Fareena Bilwani	Assistant Professor
Dr Bushra Chaudhry	Assistant Professor
Dr Ambrin Fatima	Assistant Professor
Dr Syeda Sadia Fatima	Assistant Professor
Dr Zehra Jamil	Assistant Professor
Dr Tanveer Jilani	Assistant Professor
Dr Shagufta Khan	Assistant Professor
Dr Saara Muddasir	Assistant Professor
Dr Hasan Salman Siddiqi	Assistant Professor
Dr Muhammad Zuhair Yusuf	Assistant Professor
Dr Sayed Ali Raza Shah Bukhari	Assistant Professor (Joint appointee)
Dr Junaid Iqbal	Assistant Professor (Joint appointee)
Dr Muhammad Nouman Mughal	Assistant Professor (Joint appointee)
Dr Khalid Ahmed	Senior Instructor
Dr Arfa Azhar	Senior Instructor
Dr Abdul Mannan Baig	Senior Instructor
Dr Kanza Muzaffar	Senior Instructor
Dr Rozmeen Akbar	Instructor
Dr Faiq Amin	Instructor

Teaching Associates

Dr Mishka Ahmed
Dr Alishah Akbar Ali
Dr Mohammad Ahmed Ansari
Dr Syed Mujtaba Baqir
Dr Chaudhry Ahmed Zafar Cheema
Dr Muhammad Bilal Ibrahim
Dr Fatima Mustansir
Dr Amna Afzal Saeed

Laboratory Staff

Dr Azhar Hussain
Farzana Abubakar
Javeria Farooq
Ghulam Haider
Asra Khan
Masnoon Akhtar
Mussarat Ashraf
Sabah Farhat
Mahwish Fatima
Tahira Ghulam
Adil Jamal
Sher Khan
Fizza Nazim
Zahid Hussain
Pirbux Memon

Director, BBS Laboratories
Research Specialist
Research Coordinator
Research Coordinator
Research Coordinator
Research Associate
Research Associate
Research Associate
Research Associate
Senior Research Assistant
Senior Research Assistant
Senior Research Assistant
Senior Research Assistant
Technologist
Technologist

Research Staff on Grants

Hira Rafi
Hamna Rafique
Alisalman Sheikh
Nida Farooqui
Fatima Iqbal
Hina Shakil
Prashant Tikmani

Research Associate
Research Associate
Research Associate
Senior Research Assistant
Senior Research Assistant
Senior Research Assistant
Senior Research Assistant

Administrative Staff

Gulafroze Jessa
Irfanullah Baig
Noorulain Salim
Imran Hajani
Ali Moosa
Tauqeer Ahmed
Bilal Effendi
Ramzan Samnani

Manager
Associate
Associate
Coordinator
Coordinator
Senior Assistant
Senior Assistant
Senior Assistant



Awards and Distinctions

Faculty Promotions



Dr Satwat Hashmi
Associate Professor



Dr Syed Hani Abidi
Associate Professor



Dr Zehra Jamil
Assistant Professor

Fellowship to the Higher Education Academy Appointments



Dr Satwat Hashmi



Dr Sadia Fatima



Dr Saara Muddasir

Outstanding Teacher Awards (Award Ceremony 2019)



Proud recipients Dr Zehra Jamil and Dr Syed Hani Abidi at AKU Awards Night 2019

Lab Staff Promotions

Mahwish Fatima and Sabah Farhat were reclassified as Research Associates and Asra Khan was appointed as Research Coordinator

Recognition of Service Awards

Naseema Mehboobali, Lab Specialist, and Hina Zuberi, Senior Technologist, both received Recognition of Service awards in honor of their retirement after many years of service to AKU.

Landmark Achievement Award

Tauqeer Ahmed, Senior Assistant, received a Landmark Achievement Award for 10 years of service to AKU.



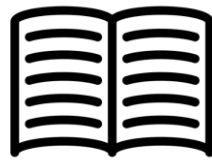
Highlights in Research



One of the overarching goals of the department is to focus on high-quality research. To further our research aims, grants management training workshops were held to create opportunities for both pre- and post-award management, research-intensive faculty were recruited, and a post-doctoral hybrid training model was developed to support BBS research foci. New faculty members were recruited in 2020, including one full-time professor and 3 Assistant Professors.



A large part of our strategic goals consisted of organizing and updating the BBS lab in order for it to serve as a thriving hub for research. The creation of general policies and SOPs for equipment use and maintenance in the lab led to careful handling of supplies and proper maintenance of the lab, and monthly training sessions were developed for lab staff where different techniques and latest technology was taught to the staff by experts in the field. The BBS lab also led a collaboration with the Department of Surgery that led to the installation of a real-time quantitative thermal cycle for the use of both departments.



90+
Publications in
2020



09 Onboard
Grants



32 Research
Seminars

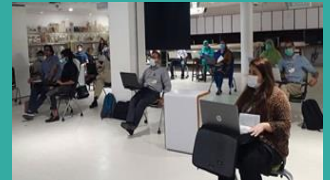


02 Books Published

Achievements in Education

Technology Enhanced Learning

In addition to continuous efforts to provide quality education across programmatic levels, the BBS faculty and staff collaborated to quickly transition to online teaching for the undergraduate medical education (UGME) program in a matter of days in response to the Covid-19 crisis. This involved the incorporation of technology across programmatic levels for delivery and assessment of learning. The training sessions were conducted by BBS faculty leads for UGME, UGME staff, IT personnel. These sessions were for both students, staff, basic and clinical faculty across AKU. In total, 600 people were trained for using MS Teams, conducting online problem-based learning session, and delivering online lectures and tutorials. Faculty across the Medical College received training and conducted these sessions throughout the year. The same group, along with UGME leadership, also developed e-assessment strategies and trained 30+ invigilators and administrative staff.



UGME Foundation semester

Substantial planning for a new initiative, the UGME Foundation semester set to launch in March 2021, took place in 2020 and involved several BBS faculty members as leads for the semester and individual courses. The overall aim of this effort is to provide students with an opportunity to develop a concentrated and in-depth understanding of fundamental basic science concepts for application in the clinical context.



MPhil in Biological and Biomedical Sciences

A new MPhil in Biological and Biomedical Sciences program was launched in January 2020. This two-year interdisciplinary program is designed to produce competent, confident and productive biomedical scientists who can continue their passion for research and learning with PhD training or have a successful career in academia or industry.



The BBS Department was honoured to become the recipient of the **Nighat and Tariq Rafi Endowment Fund**, a PKR 30 Million endowment specifically for the MPhil in Biological and Biomedical Sciences program. The benefactor, Mr Abdul Rahim Rafi, has pledged this generous endowment in honor of his parents, Nighat and Tariq Rafi, to support MPhil students' tuition fees.



Faculty of Health Sciences PhD program – Biological Sciences stream

The Biological Sciences stream of the FHS-PhD program spent the past year focused on its admission cycle, admitting PhD students, planning their coursework. These students are now in the second phase of their program. The PhD program has focused on educational activity, and molecular biology courses. One of the most noteworthy achievements was the monthly meetings with PhD students, helping them track their progress. The comprehensive exams have been successfully completed. Two students have defended their synopsis, and the second batch of PhD students to join in the first quarter of 2021.



Anatomy and Surgery Learning Studio

The Anatomy and Surgery Learning Studio (ASLS) served as an extremely beneficial and socially-distanced space to the university due to the Covid-19 pandemic. The studio was widely utilized by clinical faculty in addition to allied health education for various purposes including departmental meetings, tumor boards, curriculum meetings, educational forums and faculty interviews. ASLS was also utilized for the conduction of UGME online summative examination where faculty members and teaching associates proctored the exams via IT equipment at the lab. Recently, the Department of Pediatrics successfully conducted its Objective Structured Clinical Examination (OSCE) for its residents at ASLS and this has led to other departments doing the same.

Response to the Covid-19 Pandemic

The emergence of the novel coronavirus highlighted the need to adapt and innovate. BBS faculty and staff were involved in the institutional-wide response:

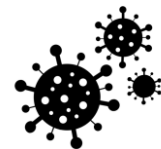
- BBS was instrumental in creating online mechanisms so that undergraduate and graduate courses continued uninterrupted with innovative, technology supported and enhanced pedagogy
- Research activities included Covid-19-related grant submissions and publications
- BBS lab staff developed an in-house hand sanitizer
- BBS members volunteered to perform N95 fit testing



BBS staff members volunteering to perform N95 fit testing



4 grant applications submitted



3 intramural grants submitted



4 research studies in progress



9 publications in national and international peer-reviewed journals