Dow University of Health Sciences

Prospectus

BS Biotechnology

Session 2025-2026

Dow College of Biotechnology (DCoB)

e-mail: admissions@duhs.edu.pk
website: www.duhs.edu.pk

MESSAGE BY VICE CHANCELLOR

PROF. DR. NAZLI HOSSAIN
Vice Chancellor
Dow University of Health Sciences

Health Sciences (DUHS), to welcome you to one of Pakistan's most distinguished institutions of medical and health sciences education.

Since its establishment in 2004, DUHS has evolved from three constituent colleges into a dynamic and comprehensive university system encompassing over fifty constituent and affiliated institutions. Rooted in the proud legacy of Dow Medical College, founded in 1945, DUHS continues to uphold a tradition of excellence, service, and innovation in healthcare education.

Our allied health programs including Pharmacy, Medical Technology, Nursing, Physical Therapy, Biotechnology, Nutrition, Public Health, Radiology Technology, Psychology, and many more, play a vital role in shaping the future of healthcare. These programs are central to our mission of producing competent, compassionate, and skilled professionals who contribute to the well-being of communities locally and globally.

As we move forward, DUHS is committed to further strengthening its academic and research ecosystem through modern technologies, state-of-the-art healthcare facilities, and a culture of innovation. With the support of our dedicated faculty and the enthusiasm of our students, we are poised to advance toward new milestones in education, research, and patient care.

To our incoming students, I extend my heartfelt congratulations on joining this vibrant academic community. Your journey at DUHS will equip you with the knowledge, skills, and values needed to make meaningful contributions to healthcare in Pakistan and beyond.

I welcome you to DUHS, a university where tradition meets innovation and where every student is empowered to make a difference.

Good luck to each of you as you embark on this fulfilling path!

MESSAGE BY PRINCIPAL

Prof. Dr. Mushtaq Hussain
Principal
Ph.D. (Genetics, Genomics and Systems Medicines)
University of Glasgow, UK

It gives me immense pleasure to welcome the new batch of Dow College of Biotechnology. The world of science is fast-moving and progressing at a teeming pace. As a result, many new branches of science have been developed to entertain the need of time and to address emerging problems of the modern-day world. Biotechnology is one such branch of science, amalgamating classical and modern disciplines of both natural and physical sciences with a particular focus on seeking and developing practical applications of theoretical knowledge. Dow College of Biotechnology, an institute of the prestigious Dow University of Health Sciences, holds the same core theme in its foundation and the college is well regarded for imparting both academic and practical skills to the students.

Dow College of Biotechnology has progressed exceptionally well and is now known for its academics and research throughout the country. In recent times, research conducted at Dow College of Biotechnology during the COVID-19 pandemic has been praised both nationally and internationally and has led to some of the best research publications from Pakistan on SARS-CoV-2 with considerable theoretical and practical insights. The college also holds a dedicated fly research lab, the first and only in any public sector university in Pakistan, and this feat is essentially present in all leading universities around the globe.

The college holds a large sum of Ph.D. faculty actively engaged in research and teaching activities. To ensure the translation of theoretical knowledge into practical application, students are encouraged to get engaged with small to advanced-level research projects with faculty as they move along during the four years of their studies. This approach makes Dow College of Biotechnology unique amongst its contemporaries on regular forums.

Dow College of Biotechnology maintains a strong linkage with the industries to keep students aware of their recent developments and demands. The college has recently developed linkage and student exchange programs with some of the prestigious International Universities. With a team of highly competent faculty and supporting staff, I am confident that we will extend our utmost support to the students to excel in their respective careers.

I wish all the best to the prospective students at Dow College of Biotechnology, God Speed.

VISION STATEMENT DUHS

To Be a Pre-Eminent Academic Institution Committed to Changing and Saving Lives

MISSION STATEMENT

Providing Outstanding Patient Centered Education, Training and Clinical Care Informed by Cutting Edge Research and Innovation Generating and Disseminating New Knowledge

INTRODUCTION OF DOW COLLEGE OF BIOTECHNOLOGY

DOW COLLEGE OF BIOTECHNOLOGY

Dow College of Biotechnology (DCoB) is a constituent College of the Dow University of Health Sciences. The college is stationed in the graceful building of Dow Research and Diagnostics Complex. The college is centrally air-conditioned and spread over 30,000 sq ft. The college has 3 lecture halls, 1 seminar hall, 3 academic labs, 3 research labs, 1 library, dedicated thesis writing and discussion rooms for the students, and the girls' common room. The college has a bioinformatics suite with 27 computers augmented with a battery of related software. The college also has an in-house commercial facility "Dow Fly Research Lab and Stock Center". The first of its kind in any public sector university in Pakistan. The BS-Biotechnology curriculum has been regularly modernized and meticulously designed to produce competent human resources in the field of biotechnology, and to train the graduates to apply the gained scientific knowledge to address locally prevalent health, environmental, food, and industrial issues. The college is also catering to the postgraduate teaching and research of M. Phil. and Ph.D. studies enrolled in the field of biotechnology and other natural and clinical sciences at Dow University of Health Sciences.

Scope of Biotechnology in Pakistan

Biotechnology is one of the most growing and exciting fields of science in the world. Biotechnology is the application of any biological system (living organisms or their derivatives) to address any problem related to human life. It is a multidisciplinary science that utilizes knowledge generated in the fields of genetic engineering, cell and tissue culture, stem cells, molecular biology, microbiology, biochemistry, vaccinology, virology, and bioinformatics to address industrial, medical, and environmental issues. Biotechnology students are trained for innovation, creative thinking, entrepreneurship, and a multidisciplinary approach to developing products for the benefit of human life. There are different branches of biotechnology such as food biotechnology, health and medical biotechnology, microbial biotechnology, agricultural biotechnology, environmental biotechnology, pharmaceutical biotechnology, industrial biotechnology, marine biotechnology, animal biotechnology etc.

Following are few applications of biotechnology:

- To produce r-DNA products, monoclonal antibodies, vaccines, diagnostics, anticancer drugs, insulin, skin grafting, and the development of tissue-specific delivery methods.
- To produce safe, efficient, and cost-effective industrial chemicals and enzymes for textile, paper, sugar, and food industries, biodegradable plastics, etc.
- To produce a wide range of GM crops, bio-fertilizers, and bio-pesticides.
- To improve environmental conditions through soil and water remediation, oil spillage, water, and sewerage treatment.
- To produce fermentation-based products, cheese, yeast, wine, beer, yogurt, food additives, etc.
- Resultantly, the students of Dow College of Biotechnology are placed at prestigious institutes and industries in Pakistan and abroad in the area of research and development, drug manufacture, quality control, and academia.

Objectives of the Program

- To develop strong theoretical and practical foundations amongst graduates in different disciplines of science that coalesce in biotechnology.
- To provide challenges that instigate students to transform their theoretical knowledge into practical solutions.
- To enhance critical thinking and interrogative analytical skills amongst the graduates.

Eligibility Criteria

- HSSC Intermediate Science (Pre-Medical or Pre-Engineering) or equivalent examination (e.g. A-Level, 12th grade etc) duly certified by IBCC with minimum 60% marks.
- Candidate's PRC & Domicile of Sindh

Seat Distribution for BS-Biotechnology at Dow College of Biotechnology

Dow College of Biotechnology offers a total of 100 seats, which are filled on a merit basis.

FEE STRUCTURE –BSBT– Session 2025-26

DOW COLLEGE OF BIOTECHNOLOGY - DCOB

Fee Type	Amount in PKR
Admission Fee – (at the time of admission)	PKR 45,000/-
Tuition Fee – (per annum)	PKR 181,188/-
Student Activity Charges – (per annum)	PKR 10,000/-
Library Fee Charges – (per annum)	PKR 10,000/-
Documents Verification Charges – (at the time of admission)	PKR 2,500/-
Without Transport	**PKR 248,688/-**
Transport Fee – (Optional) – (per annum)	PKR 43,000/-
With Transport	**PKR 291,688/-**

Above amounts are excluding govt. taxes. Taxes apply as per Govt. & FBR rules

RULES FOR THE PAYMENT OF FEE –

Fee for 2nd, 3rd & 4th year tuition fee (of the respective categories) will have to be paid within the specified time.

Late fee for succeeding years will be charged if fee is not paid within the provided deadline as per rates below:

- First month after lapse of first month 2.5 % ..…….of tuition fee
- Second month 5.0% ……..……. of tuition fee
- Third month 7% ……...of tuition fee
- Fourth month10%..... of tuition fee

Fee of all categories will be increased by 10% every year.

AFTER FOUR MONTHS OF NON-PAYMENT, THE SEAT IS LIABLE TO BE CANCELLED AND STUDENT WILL NOT BE ALLOWED TO APPEAR IN ANY EXAMINATION.

- ***Fee deposited is refundable as per the Refund policy guidelines of the DUHS.***
- ***Taxes will be applied as per the FBR/SBR rules.***
- ***Hostel and Transport fee will charge as per calendar year (i.e., Jan. to Dec.).***
- ***Amounts stated in the fee vouchers are excluded of all Bank Charges.***
- ***The Fee Structure may be revised by the university at any time during the course of the study, due to unavoidable circumstances***.

All BS Program students are required to submit an undertaking affirming that they will not waste their allotted seat.
If a student withdraws from the program or fails to join after securing admission, a
SEAT WASTAGE PENALTY EQUIVALENT TO ONE YEAR'S TUITION FEE shall be imposed.

Career Prospects/ Opportunities

Biotechnology is an interdisciplinary science that provides a fascinating platform to grow and experience the diverse fields of science and technology. It is revolutionizing new prospects and developments to improve the quality of human life. Due to the strong academic and practical training provided to biotechnology graduates, they are among the top choice of academic, research, and industrial employers. Demand for biotechnology products is rising in Pakistan therefore, there is a huge scope for biotechnology students in terms of jobs and entrepreneurship. After completing their graduation, biotechnologists will be able to choose their career in research and development sectors of various industries including textile, food, biofuel production, cosmetics, etc. They can also find their career in diagnostic laboratories and pharmaceutical industries. The horticulture industry and agriculture biotechnology laboratories and research centers are also captivating targets for newly graduated biotechnologists. Biotechnology also offers a wide range of career opportunities related to academics and research in various Institutes and Universities. It also provides innovative and exciting job opportunities in scientific and administrative sectors. Students graduate from Biotechnology secure positions at esteemed institutions and industries both nationally and internationally, focusing on research and development, drug design, quality control, and academia.

Recognition by Governing Bodies/Councils

The BS-Biotechnology program is approved by the syndicate of Dow University of Health Sciences, and the curriculum is approved by the Higher Education Commission, Pakistan. The curriculum has been designed following the centralized BS-Biotechnology curriculum of HEC-2024 with the availability of a series of quality-based laboratories are one of the chief factors in deciding the success of the program. The laboratories available at the DUHS are state-of-the-art and sufficiently equipped to facilitate the learning objectives of this curriculum.

Curriculum

BS Biotechnology at DUHS is a four-year degree program comprising eight semesters in total. The course layout is prescribed by the Higher Education Commission (HEC) of Pakistan, which consists of 48 courses of 138 credit hours. In this program, great emphasis is placed on integrating theory with practice as the curriculum is divided into both theoretical and laboratory-based learning. It is to enable students to attain the required level of expertise, before further practically testing out classroom knowledge through experiments.

STRUCTURE

S. No.	Categories	No. of Courses	Credit Hours
1	General Education Courses	13	32
3	Discipline related courses / Major	29	85
4	Interdisciplinary/Allied Courses	4	12
5	Internship		3
6	Capstone Project	2 (Research Thesis or Project + Media in Sciences)	(6 or 3+3)
	Total	**48**	**138**

- Total number of credit hours — 138
- Duration — Minimum: 4 years; Maximum: 6 years
- Semester duration — 16-18 weeks
- Semesters — 8
- Course load per semester — 15-21 credit hours
- Number of courses per semester — 5-7

BS-BIOTECHNOLOGY (4 YEAR) CURRICULUM DESIGN

General Education Courses 13 Courses 32 Credit Hours			
Subject	**Cr. hr**	**Subject**	**Cr. hr**
1. Natural Science-Principles of Biology	2+1	8. Social Sciences	2+0
2. Quantitative Reasoning I	3+0	9. Islamic Studies (Ethics for Non-Muslim Students)	2+0
3. Functional English	3+0	10.Time Management & Organization Skills	2+0
4. Application of Information & Communication Technologies (ICT)	2+1	11. Civics & Community Engagement	2+0
5. Arts & Humanities	2+0	12. Entrepreneurship	2+0
6. Quantitative Reasoning II	3+0	13. Ideology & Constitution of Pakistan	2+0
7.Expository Writing	3+0		

Disciplinary/ Major		Interdisciplinary/ Distribution Courses		Capstone Research Project	
29 Courses		4 Courses		2 Courses	
85 Credit Hours		12 Credit Hours		6 Credit Hours	
Subject	**Cr. hr**	**Subject**	**Cr. hr**	**Subject**	**Cr. hr**
1. Cell Biology	3+0	1. Organic Chemistry	3+0	1. Media in Science / Research Project I	3+0
2. Biochemistry-I	2+1	2. Ecology & Biodiversity	3+0	2. Research Project II	3+0
3. Biochemistry-II	2+1	3. Physical Chemistry	3+0		
4. Microbiology	2+1	4. Biophysics	3+0		
5. Principles of Genetics	3+0				
6. Analytical Chemistry & Instrumentation	2+1				
7. Molecular Biology	2+1				
8. Introduction to Biotechnology	3+0				
9. Immunology	3+0				
10. Methods in Molecular Biology	2+1				
11. Biostatistics	3+0				
12. Microbial Biotechnology	2+1				
13. Bioinformatics	2+1				
14. Recombinant DNA technology	2+1				
15. Agriculture Biotechnology	3+0				
16. Principles of Biochemical Engineering	3+0				
17. Genomics & Proteomics	3+0				
18. Food Biotechnology	2+1				
19. Scientific Inquiry & Research Methods	3+0				
20. Industrial Biotechnology	2+1				
21. Health Biotechnology	3+0				
22. Biosafety, Biosecurity & Bioethics	2+0				
23. Artificial Intelligence in Biotechnology	2+0				
24. Virology	3+0				
25. Nanobiotechnology	3+0				
26. Environmental Biotechnology	2+1				
27. Molecular Diagnostics	3+0				
28. Seminar I	2+0				
29. Cell & Tissue Culture	3+0				

ASSESSMENT METHODS

The examinations for BS Biotechnology are conducted semester-wise through a centralized examination department. Assessments are both theoretical and practical based on the requirements of a specific course. An internal evaluation by the respective faculty members based on pre-defined scoring criteria is also included in the assessment. A student needs to pass the previous semester's courses, including any prerequisites, before moving on to the next semester. All 48 courses, including disciplinary and interdisciplinary courses along with credit hour-based capstone research projects, must be passed to claim the degree.

Inauguration of the New Dedicated Building of Dow College of Biotechnology

The new dedicated building of Dow College of Biotechnology has been inaugurated on 15th March 2023. The formal inauguration was done by Prof. Dr. Ahsan Iqbal Choudhary, Federal Minister of Planning Commission and Development, Pakistan.

کراچی: ڈاؤ یونیورسٹی اوجھا کیمپس میں ایڈوانسڈ مالیکیولر جینیٹکس اینڈ جینومکس لیب کے افتتاح، ڈاؤ فلائی ریسرچ لیب اینڈ اسٹاک اور کالج آف بائیوٹیکنالوجی کے معائنے کے بعد مہمانِ خصوصی وفاقی وزیر پروفیسر احسن اقبال چوہدری اور وائس چانسلر پروفیسر محمد سعید قریشی خطاب کر رہے ہیں

FACILITIES

The Dow College of Biotechnology (DCoB) is a centrally air-conditioned facility holding a dedicated floor in the Dow Research and Diagnostics Complex located in the Southeast of the Dow University of Health Sciences, Ojha Campus. DCoB has three (03) state-of-the-art academic and research laboratories equipped with all basic and advanced instruments that are required for biotechnology research. DCoB also possesses a Dow Fly Research Lab and Stock Center and dedicated animal and plant cell culture laboratories. DCoB is holding three (03) lecture halls equipped with multimedia facilities and a capacity of 100 students in each. A dedicated and well-equipped seminar room for postgraduate students is also a part of the DCoB facility. The in-house advanced library with recent editions of all basic and advanced biotechnology books is also a part of DCoB to facilitate students' learning.

Academic and Research Laboratories

Dow Fly Research Lab and Stock Center

Dow College of Biotechnology has a dedicated Drosophila research facility “Dow Fly Research Lab and Stock Center”. The facility is the first of its kind in Pakistan in any public sector University. In addition to the research, the facility is also engaged in the Bioactive Molecule Screening, Oncogenicity and Teratogenicity testing, Hepatotoxicity, and Nephrolithiasis testing in animal models.

Bioinformatics Laboratory

A dedicated bioinformatics lab is equipped with high-technology equipment of 20 computers with updated software and servers, capable of doing a variety of bioinformatics analysis and effective learning.

Lecture Halls

The college has three large lecture halls and one seminar room for conducting lectures which are equipped with computers connected with multimedia to facilitate the delivery of lectures.

College Library

The DCoB library has a vast collection of multidisciplinary books covering the basic to advance levels of the all the subjects included in the BS biotechnology curriculum adopted at DCoB. The collection includes updated books on Biotechnology, Microbiology, Biochemistry, Bioethics Organic and Inorganic Chemistry, Physiology, Pathology, Immunology, Virology, Tissue Culture Techniques, Pharmaceutical Sciences, Plant Biotechnology, Animal Biotechnology, Industrial Biotechnology, Economics, Molecular Biology, Bioinformatics, Artificial Intelligence and Machine Learning.

Bioprocessing Unit

Dow College of Biotechnology is also furnished with a large-scale Bioprocessing Unit. This makes the college first of the its kind in Pakistan being equipped with industrial scale fermentation plant. The unit has a capacity of 500 L that is laced with all the gadgets linked with modern fermentation technology. The plant is commissioned to not only provide relevant research platform but also to provide students hands on experience of industrial scale production of biotechnological cellular and molecular products.

EXTRACURRICULAR ACTIVITIES

ORIENTATION DAY OF DCoB-2025

SPORTS TEAMS OF DCoB

DCoB Girls' Team "Marvels" Winners of the Dow Premier League 4 (DPL 4)

BS Student secured 1st Prize in the Chess Competition at Intra-DUHS Indoor Games

BS Students securing the Runner-up Position in the Table Tennis Singles & Doubles Competitions

DCoB Girls team secured 1st Position in Basketball Competition at DUHS

DCoB Girl's Throwball Team securing the Runner-up Position in Throwball Competition at DUHS

MEDIA EXPOSURE OF DCoB STUDENTS

PARTICIPATION OF DCoB FACULTY IN NATIONAL AND INTERNATIONAL SCIENTIFIC EVENTS

SUPARCO handed over a 2D Clinostat to Dow Fly Research Lab and Stock Center.

Oral presentation in the 16th ISNPC at ICCBS, University of Karachi

Oral presentation in the 2nd International Conference on Life Sciences at SZABIST

Guest Speaker in the workshop on Combating Antibiotic Resistance at FUAAST

Oral presentation in the 1st International Congress on Nanoscience and Nanotechnology (ICNN-1) at ICCBS, UoK

Oral presentation in the 1st International Congress on Nanoscience and Nanotechnology (ICNN-1) at ICCBS, UoK

ACHIEVEMENTS AND RECENT PRIZES AWARDED TO DCoB STUDENTS

BS students have secured 2nd Position in the All Karachi Quiz Competition

BS student secured 2nd Position in Intra DUHS Bilingual Declamation Contest

DCoB secured 3rd position for Poultry Vaccine development at 8th DUHS-DICE

DCoB Students Team "Ecoplast" won a Rs. 500,000/- grant at FPCCI

BS students Team "EcoOxy Station" won special prize at 8th All-Pakistan DUHS-DICE

BS students Team "Walmint" won special prize at 8th All-Pakistan DUHS-DICE

DCoB students won 3rd position in Annual Research Talk, Research Poster Competition at

DCoB M.Phil. scholar secured the Second-Best Poster Prize

BS students Team “Filtresha” secured 3rd Prize at Ideatex by XSeed

BS student secured 2nd Position Intra DUHS National Song Singing Competition

BS Students secured 1st position in the All-Karachi Bait Baazi Competition

BS students secured 2nd and 5th positions at the 1st International Conference on SDGs

SELECTED INTERNATIONAL PUBLICATIONS OF DCoB FACULTY AND STUDENTS FROM 2020 ONWARDS

1. Hanif MI, Bari MF, Hussain M, Khan N, Hossain N, Quraishy MS, Kirmani S. Integrating genetics into medical curriculum: evaluating a dedicated clinical genetics module at Dow university of health sciences. BMC Medical Education. 2025 Dec;25(1):1-7.

2. Fasih F, Jabeen N, Hussain M, Habib A, Sharafat S, Ul-Haq Z. Structural and antigenic variation in Hepatitis B virus oncogene, HBx. Journal of Biomolecular Structure and Dynamics. 2025 Jun 9:1-7.

3. Naz S, Kayani HA, Jamil I, Nadeem F, Qadir RA, Qadir SA. Synergistic enhancement of Cannabis sativa L. In vitro growth, metabolite production, and antioxidant activity using silver nanoparticles and plant growth regulators. Plant Cell, Tissue and Organ Culture (PCTOC). 2025 Oct;163(1):8.

4. Naz S, Kauser N, Kayani HA, Saeed BA, Jamil I, Galani S. Development of in vitro regeneration protocol and Agrobacterium-mediated transient transformation system in Furcraea foetida. Plant Cell, Tissue and Organ Culture (PCTOC). 2025 Jun;161(3):89.

5. Ahmed I, Javed U. Innovative PVA-kaolin-thyme composite: synthesis, hemostatic efficiency, and antimicrobial properties. Polymer Bulletin. 2025 Jun 10:1-20.

6. Khan H, Gul A, Najam Z, Malik T. Biogenic silver nanoparticles optimization using Plackett–Burman design and its synergistic effect with cefotaxime against multidrug resistant clinical isolates. Scientific Reports. 2025 May 28;15(1):18742.

7. Tahir W, Fatima SM, Moin SF, Moin M, Waheed H. Datura alba seed proteins effect on snake venom enzymes with antioxidant and antibacterial activities. Journal of Taibah University Medical Sciences. 2025 Feb 13;20(1):81.

8. Tahir W, Fatima SM, Moin SF, Moin M, Waheed H. Datura alba seed proteins effect on snake venom enzymes with antioxidant and antibacterial activities. Journal of Taibah University Medical Sciences. 2025 Feb 13;20(1):81.

9. Nisar H, Amin R, Khan S, Fatima T. Correlation between selenium levels and selenoproteins expression in idiopathic generalized epilepsy: a study from Karachi. BMC neurology. 2025 Jan 23;25(1):34.

10. Aslam A, Javed U, Hussain M. Circulating triacylglycerides influence egg-to-adult viability in Drosophila melanogaster. Physiological Entomology. 2025 Jun;50(2):119-27.

11. Shabbir S, Hadi A, Jabeen N, Hussain M. Developmental exposure of antibiotics shortens life span and induces teratogenicity in Drosophila melanogaster. Toxicology Reports. 2024 Dec 1;13:101784.

12. Zafar S, Balouch A, Gul A, Qayyum S, Muzafar W, Khan H, Jabeen A, Akram J, Azhar I, Shah MR. Development of Polydopamine coated Niosomal formulation for Improved antioxidant, anti-inflammatory and antibacterial activities of Diacerein. Journal of Molecular Structure. 2024 Aug 25;1338:142284.

13. Fazil MM, Gul A, Jawed H. Optimization of silver nanoparticles synthesis via Plackett–Burman experimental design: in vitro assessment of their efficacy against oxidative stress-induced disorders. RSC advances. 2024;14(29):20809-23.

14. Gul A, Baig MN, Ahmed D, Najam Z, Aslam T, Ali S. Green Synthesis of Silver Nanoparticles from Spirulina platensis Extract: Antibacterial and Antioxidant Potential. BioNanoScience. 2024 Jun 6:1-0.

15. Siddiqui A, Gul A, Khan H, Anjum F, Hussain T. Bio-inspired synthesis of silver nanoparticles using Salsola imbricata and its application as antibacterial additive in glass ionomer cement. Nanotechnology. 2024 Jun 17;35(35):355101.

16. Siddiqui F, Tafur A, Hussain M, García-Ortega A, Darki A, Fareed J, Jiménez D, Bikdeli B, Galeano-Valle F, Fernández-Reyes JL, Pérez-Pinar M. The prognostic value of blood cellular indices in pulmonary embolism. American Journal of Hematology. 2024 May 30.

17. Khan SA, Anwar M, Gohar A, Roosan MR, Hoessli DC, Khatoon A, Shakeel M. Predisposing deleterious variants in the cancer-associated human kinases in the global populations. Plos one. 2024 Apr 18;19(4):e0298747.

18. Shahid F, Aman A, Qader SA. Synthesis and characterization of cross-linked aggregates of dextranase (CLAD) for improved stability and recycling efficiency of the biocatalyst. Biocatalysis and Agricultural Biotechnology. 2024 Jun 1;58:103151.

19. Khan S, Amin F, Amin R, Kumar N. Exploring the Effect of Cetylpyridinium Chloride Addition on the Antibacterial Activity and Surface Hardness of Resin-Based Dental Composites. Polymers. 2024 Feb 21;16(5):588.

20. Ullah, S., Kayani, H.A., Fatima, R., Naz, S. Haq, F., Hussain, Z. & Suhail, H. Surveillance Assessment and Morphological Identification of Culex Mosquito Found in Karachi, Pakistan. Journal of Xi'an Shiyou University, Natural Science Edition 2024 Jan; 20(1): 1107.

21. Mehdi F, Riaz Z, Javed U, Aman A, Galani S. Expression of Sucrose Metabolizing

Enzymes in Different Sugarcane Varieties under Progressive Heat Stress. Frontiers in Plant Science.; 2023 October 16; 14:1269521.

22. Israr F, ul Hasan SM, Hussain M, Hasan A. Investigating In-Situ Expression of Neurotrophic Factors and Partner Proteins in Irreversible Pulpitis. Journal of Endodontics. 2023 Sep 3.

23. Amanullah A, Arzoo S, Aslam A, Qureshi IW, Hussain M. Inbreeding-Driven Innate Behavioral Changes in Drosophila melanogaster. Biology. 2023 Jun 28;12(7):926.

24. Khan N, Perveen K, Hussain M, Qadeer-Malik R, Sharafat S. Comparative Histological Analysis of Cerebellum of Representative Species of Elasmobranchii. International Journal of Morphology. 2023 Apr;41(2):383-8.

25. Mustansar T, Mirza T, Hussain M. RAS gene mutations and histomorphometric measurements in oral squamous cell carcinoma. Biotechnic & Histochemistry. 2023 Apr 5:1-9.

26. Kamran DE, Hussain M, Mirza T. Investigating In-Situ Expression of c-MYC and Candidate Ubiquitin-Specific Proteases in DLBCL and Assessment for Peptidyl Disruptor Molecule against c-MYC-USP37 Complex. Molecules. 2023 Mar 7;28(6):2441.

27. Gul A, Ahmed D, Fazil MM, Aslam T, Rashid MA, Khan H, Ali A, Ali S. Biofabrication of silver nanoparticles using Spirulina platensis: In vitro anti-coagulant, thrombolytic and catalytic dye degradation activity. Microscopy Research and Technique. 2023 May 26.

28. Wajdan N, Aslam K, Amin R, Khan S, Ahmed N, Lal A, AlHamdan EM, Vohra F, Abduljabbar T, Heboyan A. Anti-fungal efficacy of Miswak Extract (Salvadora Persica) and commercial cleaner against Candida albicans on heat cured polymethylmethacrylate denture base. Journal of Applied Biomaterials & Functional Materials. 2023 Apr; 21:22808000231165666.

29. Shahbaz U, Basharat S, Javed U, Bibi A, Yu XB. Chitosan: a multipurpose polymer in food industry. Polymer Bulletin. 2023 Apr;80(4):3547-69.

30. Hussain M, Siddiqui F, Omer SM, Amanullah A, Jabeen N, Kantarcioglu B, Fareed J. Molecular Systems Network Predicts Sars-Cov-2 NSP3 and Orf6 Role in COVID-19 Related Thrombotic Events. Blood. 2022 Nov 15;140(Supplement 1):11216-7.

31. Naqvi F, Dastagir N, Jabeen A. Honey proteins regulate oxidative stress, inflammation and ameliorates hyperglycemia in streptozotocin induced diabetic rats. BMC Complementary Medicine and Therapies. 2022 Dec;23(1):1-3.

32. Hussain M, Amanullah A, Aslam A, Raza F, Arzoo S, Qureshi IW, Waheed H, Jabeen N, Shabbir S, Sayeed MA, Quraishy S. Design and immunoinformatic assessment of

candidate multivariant mRNA vaccine construct against immune escape variants of SARS-CoV-2. Polymers. 2022 Aug 10;14(16):3263.

33. Ali S, Shalim E, Farhan F, Anjum F, Ali A, Uddin SM, Shahab F, Haider M, Ahmed I, Ali MR, Khan S. Phase II/III trial of hyperimmune anti-COVID-19 intravenous immunoglobulin (C-IVIG) therapy in severe COVID-19 patients: study protocol for a randomized controlled trial. Trials. 2022 Nov 8;23(1):932.

34. Gul A, Khan S, Arain H, Khan H, Ishrat U, Siddiqui M. Three-phase partitioning as an efficient one-step method for the extraction and purification of bromelain from pineapple crown waste. Journal of Food Processing and Preservation. 2022 Nov;46(11):e16973.
35. Hussain M, Amanullah A, Aslam A, Raza F, Arzoo S, Qureshi IW, Waheed H, Jabeen N, Shabbir S, Sayeed MA, Quraishy S. Design and immunoinformatic assessment of candidate multivariant mRNA vaccine construct against immune escape variants of SARS-CoV-2. Polymers. 2022 Aug 10;14(16):3263

36. Zainulabid UA, Mat Yassim AS, Hussain M, Aslam A, Soffian SN, Mohd Ibrahim MS, Kamarudin N, Kamarulzaman MN, Hin HS, Ahmad HF. Whole genome sequence analysis showing unique SARS-CoV-2 lineages of B. 1.524 and AU. 2 in Malaysia. PloS one. 2022 Feb 25;17(2):e0263678.

37. Sahar N, Arif S, Iqbal S, Riaz S, Fatima T, Ara J, Banks J. Effects of drying surfaces and physical attributes on the development of Aflatoxins (AFs) in red chilies. Journal of Food Processing and Preservation. 2022 Feb;46(2): e16173.

38. Shabbir A, Waheed H, Ahmed S, Shaikh SS, Farooqui WA. Association of salivary Cathepsin B in different histological grades among patients presenting with oral squamous cell carcinoma. BMC Oral Health. 2022 Mar 8;22(1):63.

39. Aman A, Shahid F, Pervez S. Exploration of a three-dimensional matrix as micro-reactor in the form of reactive polyaminosaccharide hydrogel beads using multipoint covalent interaction approach. Biotechnology Letters. 2022 Feb;44(2):299-319.

40. Gul A, Siddiqui M, Arain H, Khan S, Khan H, Ishrat U. Extraction, partial purification and characterization of bromelain from pineapple (Ananas comosus) crown, core and peel waste. Brazilian Archives of Biology and Technology. 2021 Jul 5;64.

41. Majeed MM, Ahmed I, Roome T, Fatima T, Amin R. Association between interleukin-1β gene polymorphism and chronic periodontitis. European Journal of Dentistry. 2021 Jul 24;15(04):702-6.

42. Batool TS, Hussain M, Masnoon J, Abdullah A, Ali S, Shahzad S, Raza S. Investigating sequence variation in the PNPi protein gene of Puccinia striiformis f. sp. tritici and its interaction with wheat NPR1 protein. Journal of Plant Pathology. 2021 Nov; 103:1231-41.

43. Khan ZM, Waheed H, Khurshid Z, Zafar MS, Moin SF, Alam MK. Differentially expressed salivary proteins in dental caries patients. BioMed Research International. 2021 Oct 14;2021.

44. Raza F, Hussain M. Birth and death of CYLD paralogues in vertebrates. Gene Reports. 2021 Sep 1; 24:101190.

45. Khan ZM, Waheed H, Khurshid Z, Zafar MS, Moin SF, Alam MK. Differentially expressed salivary proteins in dental caries patients. BioMed Research International. 2021 Oct 14;2021.

46. Zehravi M, Wahid M, Ashraf J, Fatima T. Whole-Exome Sequencing Identifies Small Mutations in Pakistani Muscular Dystrophy Patients. Genetic Testing and Molecular Biomarkers. 2021 Mar 1;25(3):218-26.

47. Amin R, Khan S, Zeb TF, Ali S, Baqai N, Baqai M, Shuja S. Knowledge and attitudes toward genetically modified (GM) food among health sciences university students in Karachi, Pakistan. Nutrition & Food Science. 2021 Sep 6;51(7):1150-62.

48. Gul A, Siddiqui M, Arain H, Khan S, Khan H, Ishrat U. Extraction, partial purification, and characterization of bromelain from pineapple (Ananas comosus) crown, core and peel waste. Brazilian Archives of Biology and Technology. 2021 Jul 5;64.

49. Ali S, Uddin SM, Shalim E, Sayeed MA, Anjum F, Saleem F, Muhaymin SM, Ali A, Ali MR, Ahmed I, Mushtaq T. Hyperimmune anti-COVID-19 IVIG (C-IVIG) treatment in severe and critical COVID-19 patients: A phase I/II randomized control trial. EClinicalMedicine. 2021 Jun 1;36.

50. Ali S, Uddin SM, Ali A, Anjum F, Ali R, Shalim E, Khan M, Ahmed I, M Muhaymin S, Bukhari U, Luxmi S. Production of hyperimmune anti-SARS-CoV-2 intravenous immunoglobulin from pooled COVID-19 convalescent plasma. Immunotherapy. 2021 Apr;13(5):397-407.

51. Hussain M, Shabbir S, Amanullah A, Raza F, Imdad MJ, Zahid S. Immunoinformatic analysis of structural and epitope variations in the spike and Orf8 proteins of SARS-CoV-2/B. 1.1. 7. Journal of medical virology. 2021 Jul;93(7):4461-8.

52. Batool TS, Hussain M, Masnoon J, Abdullah A, Ali S, Shahzad S, Raza S. Investigating sequence variation in the PNPi protein gene of Puccinia striiformis f. sp. tritici and its interaction with wheat NPR1 protein. Journal of Plant Pathology. 2021 Nov; 103:1231-41.

53. Raza F, Hussain M. Birth and death of CYLD paralogues in vertebrates. Gene Reports. 2021 Sep 1; 24:101190.

54. Hussain M, Shabbir S, Amanullah A, Raza F, Imdad MJ, Zahid S. Immunoinformatic analysis of structural and epitope variations in the spike and Orf8 proteins of SARS-CoV-2/B. 1.1. 7. Journal of medical virology. 2021 Jul;93(7):4461-8.

55. Hussain M, Jabeen N, Raza F, Shabbir S, Baig AA, Amanullah A, Aziz B. Structural variations in human ACE2 may influence its binding with SARS-CoV-2 spike protein. Journal of medical virology. 2020 Sep;92(9):1580-6.

56. Uddin N, Hussain M, Rauf I, Zaidi SF. Identification of key pathways and genes responsible for aggressive behavior. Computational biology and chemistry. 2020 Oct 1; 88:107349.

57. Hussain M, Jabeen N, Shabbir S, Udin N, Aziz B, Amanullah A, Raza F, Baig AA. Dataset for homologous proteins in Drosophila melanogaster for SARS-CoV-2/human interactome. Data in Brief. 2020 Oct 1; 32:106082.

58. Hussain M, Jabeen N, Amanullah A, Baig AA, Aziz B, Shabbir S, Raza F, Uddin N. Molecular docking between human TMPRSS2 and SARS-CoV-2 spike protein: conformation and intermolecular interactions. AIMS microbiology. 2020;6(3):350.

59. Shahid F, Ansari A, Aman A, Qader SA. A comparative study among different protocols of immobilization of dextranase using chitin as a matrix. Catalysis Letters. 2020 Mar; 150:613-22.

60. Nawaz R, Gul S, Amin R, Huma T, Al Mughairbi F. Overview of schizophrenia research and treatment in Pakistan. Heliyon. 2020 Nov 1;6(11).

61. Grazielle-Silva V, Zeb TF, Burchmore R, Machado CR, McCulloch R, Teixeira SM. Trypanosoma brucei and Trypanosoma cruzi DNA mismatch repair proteins act differently in the response to DNA damage caused by oxidative stress. Frontiers in Cellular and Infection Microbiology. 2020 Apr 16; 10:154.

RESEARCH GRANTS AWARDED TO DCoB FACULTY

1. “Genetic & Functional Characterization of PKR Pathway Orthologues in *Drosophila melanogaster* using CRISPR-CAS9 Gene Editing System”. National Post Doc Fellowship Program (Phase II), Sindh Higher Education Commission (2025).

2. "Development & Genetic Characterization of Amelogenesis Imperfecta Model in Drosophila melanogaster", Sindh HEC Grant 2024-2025.

3. “Quest for Genetic Elements Influencing Outcome of Traumatic Brain Injury using Drosophila melanogaster as Model Organism”, (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

4. “Whole Genomic Sequencing, Annotation and Propagation of Wolbachia isolated from Drosophila melanogaster ANU-1”, (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

5. "Cobra’s & Russell’s Viper Venom Neutralization by Biofabrication of Titanium Oxide

Nanoparticles", Sindh HEC Grant 2024.

6. “In-vitro Study on Big Four Snake Venom Activity Inhibition by bio-fabricated Silver and Titanium Oxide Nanoparticles”, (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

7. "Configuration of a Recombinant Uricase Expression System via Genetic Engineering Employing Variance in Uricolytic Activity and Stability", (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

8. "Evaluate the Antioxidant, Anti-Inflammatory, and Antidiabetic Potential of *Cannabis sativa* L. In Vitro Cultures", (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

9. “Role of Inflammation and Oxidative Stress in Development of Mycobacterium Tuberculosis Infection in Type II Diabetes Mellitus Patients in Karachi”, (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

10. Novel Gelatin Nanoparticles for efficient and enhanced Anti- Inflammatory Therapy: Formulation, Characterization and Biological Assessment”, (VCSFI-2024), Dow University of Health Sciences, Karachi-Pakistan.

11. Cannabis Derived Bioactive Molecules, Funded by Swiss Pharmaceuticals (Pvt) Ltd. (August 2024)

12. Attenuation of NLRP3 Inflammasome Pathway in Human Synovial Cells using Ticagrelor Nano-formulation. Funded by Vice Chancellors' Seed Funding (VCSFI-2023), Dow University of Health Sciences, Karachi-Pakistan.

13. Green Synthesis of Silver (Ag) Nanoparticles from *In-vitro* Propagated *Cannabis sativa L*. Cultures: Characterization and Exploring the Therapeutic Potential in Animal Model of Neurodegenerative Disorders. Funded by Vice Chancellors' Seed Funding (VCSFI-2023), Dow University of Health Sciences, Karachi-Pakistan.

14. Whole Genome Sequencing of Microbiota of *Drosophila*, GetGenome, UK.

15. Establishment of Cost-effective Platform for Screening Toxicity of Snake Venom using Drosophila melanogaster. Funded by Vice Chancellors' Seed Funding (VCSFI-2023), Dow University of Health Sciences, Karachi-Pakistan.

16. Production and Recovery of Citric Acid from Indigenously Isolated Aspergillus niger. Funded by Vice Chancellors' Seed Funding (VCSFI-2023), Dow University of Health Sciences, Karachi-Pakistan.

17. BioRaff-Spray wound with Sprite. Funded by Vice Chancellors' Seed Funding (VCSFI-2023), Dow University of Health Sciences, Karachi-Pakistan.

18. UNESCO Green chemistry Research Grant on Development of biodegradable composite food packaging film infused with bioinspired nanoparticles and its utilization in increasing the shelf life of climacteric fruits, June 2023.

19. "Novel approach to combat antimicrobial resistant fungal infections by epigenetic regulation; Expression profiling of histone deacetylases and screening of novel deacetylases inhibitors as potential therapeutic agents for antifungal resistant *C.albicans* infection. Research grant, Awarded by Health Research Institute (HRI), National Institute of Health (NIH) Grant No: SG/22/R3-20/RDC/1640. (1.8 million PKR-Dated: 14-04-2023).

20. Polymorphism in IFN-γ and IL-10 genes and risk of Mtb infection in type II diabetes patients in Karachi, Pakistan. Research grant, Awarded Health Research Institute (HRI), National Institute of Health (NIH). Grant No: SG-22/R3-27/RDC/DUHS/2025.
(2 million PKR 1.5Yr-Dated: 25-05-2023).

21. "Development of Dow Fly Research Lab and Stock Center", Funded by Dow University of Health Sciences (1.4 million PKR).

22. "Poultry Vaccine against Ranikhet, Bird Flu and Gumboro using Indigenous Viral Strain" Funded by Funded by Dow University of Health Sciences (3 million PKR).

23. "In-Vitro and in-Vivo Studies of Camel Milk Proteins and Peptides - A Potential Therapeutic Approach towards Liver Cirrhosis", Awarded by International Foundation for Science (IFS), Swedon.

24. "Small Variations for Big Changes", Awarded by European Society for Evolutionary Biology (ESEB), UK.

25. "Screening COVID-19 Vaccinated and Unvaccinated Population for Hematological Markers, Awarded by Loyola University, Chicago-USA.

26. "Development of Thrombosis Model for Screening of Antithrombotic Drugs", Awarded by Loyola University, Chicago-USA

27. "Demonstration and Promotion of a Series of Tuberculosis Treatment and Prevention Products", Awarded by Institute of Biophysics-Chinese Academy of Sciences (IBP-CAS), China.

28. "Development of Pilot Scale System for Phycoremediation of Textile Effluent with Concomitant Production of Algal Biomass", Awarded by Higher Education Commission, Pakistan.

29. "Development of Raloxifene-Loaded Self-Nanoemulsifying Drug Delivery System (SNEDDS) with Enhanced Bioavailability Potential: A Therapeutic Implication in

Osteoporosis", Awarded by Higher Education Commission, Pakistan.

30. "Evaluation of Anti-Rheumatic Potential of Ticagrelor in Rheumatoid Arthritis Fibroblast-like Synoviocytes via Modulation of NLRP3 Inflammasome", Awarded by Higher Education Commission Sindh, Pakistan.

31. "Error Rate and Coefficients Quantification of Neurological Defects due to Consanguineous Mating using *Drosophila melanogaster* Model", Awarded by Vice Chancellors' Seed Funding Initiative (VCSFI), Karachi, Pakistan

32. "Development of *Drosophila melanogaster*-Based Assay System for Screening of Carcinogenic Compounds", Awarded by Vice Chancellors' Seed Funding Initiative (VCSFI), Karachi, Pakistan.

33. "Isolation, Purification and Characterization of Bioactive and Anti-cancerous Small Molecules from *Oxalis corniculate*", Awarded by Vice Chancellors' Seed Funding Initiative (VCSFI), Karachi, Pakistan.

34. "Osteoinductive Potential of Selenium Nanoparticles via Regulation of Oxidative Stress in Human Umbilical Cord Derived-Mesenchymal Stem Cells: A Promising Therapeutic Approach in Bone Disorders", Awarded by Vice Chancellors' Seed Funding Initiative (VCSFI), Karachi, Pakistan.

35. "*In-vitro* Propagation and Enhanced Cannabinoids Production of *Cannabis sativa* L. (Industrial Hemp)", Awarded by Vice Chancellor's Seed Funding Initiative (VCSFI), Karachi, Pakistan.

36. "Investigating Protein Interaction of Cancer Associated Ubiquitin Specific Proteases", Awarded by Higher Education Commission, Pakistan.

37. "Establishment of high cell density culture of *Sacchromyces boulardii* and scale up using bench scale bioreactor": Demonstration of lab scale probiotic production", Awarded by Higher Education Commission, Pakistan.

38. "Development of first Commercial scale citric acid production plant in Pakistan by submerged fermentation of *Aspergillus niger* using cane molasses as raw material; A milestone yet to be achieved", Awarded by Higher Education Commission, Pakistan.

39. "Hemicellulosic furfural production from sugarcane bagasse", Awarded by Higher Education Commission, Pakistan.

40. "Plantation drive for *Moringa olifera* (Sohanghna) plant across university campus and awareness campaign regarding its nutritional and medicinal value", Awarded by Higher Education Commission, Pakistan.

41. "Mass production of commercially important micro algae through distillery effluent and selection of specific algal strains", Awarded by Pak Ethanol (PVT) Limited, Pakistan.

INTERNATIONAL INSTITUTIONAL LINKAGES

Dow College of Biotechnology has strong collaborative research links with universities around the world. The numbers are growing each year.

- Biogene, UK
- Loyola University, USA
- Chapman University, USA
- Niversite de Lausanne Hospital Opthalmique Jules-Gonin Lausanne, Switzerland
- Department of Pathology and Immunology PATIM, University of Geneva, Switzerland
- Universiti Malaysia Pahang (UMP), Malaysia
- RHnanopharmaceuticals, USA
- Universite de Lausanne Hospital Opthalmique Jules-Gonin Lausanne, Switzerland
- Department of Pathology and Immunology PATIM, University of Geneva, Switzerland

NATIONAL INSTITUTIONAL LINKAGES

Dow College of Biotechnology has also established scientific collaborations with various national institutes and universities.

- Sindh Agriculture University, Tandojam
- Space & Upper Atmosphere Research Commission (SUPARCO)
- Swiss Pharmaceuticals (Pvt) Ltd
- Sindh Institute of Animal Health (SIAH)
- Usman Institute of Technology (UIT)
- International Center for Chemical and Biological Sciences (ICCBS), University of Karachi
- Shaheed Benazir Bhutto Women University (SBBWU), Peshawar
- Z.H.Z Centre of Proteomics, University of Karachi
- Institute of Sustainable Halophyte Utilization (ISHU), University of Karachi
- Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi
- Jinnah University for Women, Karachi
- Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST)

FUTURE PROSPECTS

BS Biotechnology opens a wide range of career opportunities due to the multidisciplinary nature of the program. Globally, Biotechnology is an emerging field of science with an ever-increasing demand for biotechnology graduates. The past two years of the COVID-19 pandemic have profoundly demonstrated the importance of Biotechnology. The curriculum of BS Biotechnology at Dow College of Biotechnology would put students in a strong position in the market for careers not only in Biotechnology in general but concomitantly in Genetic Engineering, Cell & Molecular Biology, Stem Cell Therapy and Regenerative Medicine, Biochemistry, Molecular Genetics, Microbiology, Molecular Diagnostics, and Bioinformatics. Research and development opportunities are also available to BS Biotechnology graduates, not only in hospitals and public health laboratories, but also in major pharmaceutical, food, and agricultural industries.

Students graduating from this program will be prepared for jobs that involve developing breakthrough products through research and development. The BS Biotechnology graduates could comfortably find their niche in industries where technologies are in development and/or in application and to combat debilitating and rare diseases, reduce environmental footprint, alternate energy sources, cost-effective and ecofriendly industrial manufacturing processes. Additionally, a BS Biotechnology degree may also be useful for careers in Ecology, Forensic Medicine, Science Writing, and Environmental Science.

Many students who have graduated from Dow College of Biotechnology have secured positions at esteemed research institutions and industries, both in Pakistan and abroad. Their career paths encompass various sectors, including research and development, drug manufacturing, quality control, and academia. This success is a testament to the college's comprehensive educational programs and strong industry connections that enable students to meet the challenge of dynamically evolving academia and industry, once graduated.

FACULTY

Prof. Dr. Mushtaq Hussain
Principal
Ph.D. (Genetics)
Genomics and Systems Medicines
University of Glasgow, UK

Dr. Humera Waheed
Vice Principal
Ph.D. (Biochemistry)
ICCBS,
University of Karachi

Dr. Rafat Amin
Associate Professor
Ph.D. (Natural Sciences)
Eberhard Karls University
Tubingen, Germany

Dr. Sadaf Khan
Associate Professor
Ph.D. (Biochemistry)
University of Western Australia, Australia

Dr. Tehseen Fatima
Associate Professor
Ph.D. (Infection and Immunity)
University of Glasgow, UK

Dr. Anum Gul
Assistant Professor
Ph.D. (Molecular Medicine)
ICCBS,
University of Karachi

Dr. Sheeba Naz
Assistant Professor
Ph.D. (Biotechnology)
ICCBS,
University of Karachi

Dr. Faiza Nadeem
Assistant Professor
Ph.D. (Biotechnology)
KIBGE,
University of Karachi

Dr. Salman Ahmed
Assistant Professor
Ph.D. (Molecular Medicine)
ICCBS,
University of Karachi

Dr. Nida Dastagir
Assistant Professor
Ph.D. (Molecular Medicine)
ICCBS,
University of Karachi

Dr. Maheera Moin
Assistant Professor
Ph.D. (Chemistry)
Sheffield Hallam
University, UK

Dr. Urooj Javed
Assistant Professor
Ph.D. (Biotechnology)
KIBGE,
University of Karachi

Engr. Tabish Ali
Senior Lecturer
BE (Chemical Eng),
ME (Environmental Eng)
NED University

Ms. Anusha Amanullah
Lecturer
D. Phil Scholar
(Clinical Medicine)
University of Oxford

Ms. Iqra Ahmed
Lecturer
Ph.D. Scholar
(Biotechnology)
Dow University of Health
Sciences

Ms. Aliya Shujaat
Lecturer
Lab Manager
BS (Biotechnology)
University of Karachi

Dr. Shabana Arzoo
Lecturer
Pharm D., M.Phil.
(Pharmacology)
Dow University of Health
Sciences

Ms. Hanzala Khan
Lab Manager
BS (Microbiology)
Jinnah University for
Women

Ms. Ruqiya Fatima
Lab Manager
BS (Microbiology)
Jinnah University for
Women

Mr. Abeer Noor Muhammad
Instructor
M.Phil. Scholar
(Biotechnology)
Dow University of Health
Sciences

RESEARCH ASSOCIATES

Tuba Ghayas
Research Associate
M. Phil Scholar
(Biotechnology)

Muhammad Fahad Bin Alam
Research Associate
M. Phil Scholar
(Biotechnology)

Muqaddas Shoaib
Research Associate
M. Phil Scholar
(Biotechnology)

Muhammad Hamza
Research Associate
M. Phil Scholar
(Biotechnology)

Iqra Rizwan
Research Associate
M. Phil Scholar
(Biotechnology)

ADMINISTRATION STAFF

Muhammad Asim Ameen
Administrative Officer
MBA
University of Karachi

Asif Siddiqe
Manager Services
MS (Computer Science)
Ilma University

Syed Imran Ali
Lab Assistant
BTech Electronics
Indus University

Hafeez Ahmed
Data Entry Operator
B. Com
University of Karachi

Salman Salam
Junior Software Programmer
MS (Management Sciences)
Sindh Madressatul Islam University