



LUMS

Create  
your own Future

# SYED BABAR ALI SCHOOL OF SCIENCE AND ENGINEERING (SBASSE)

BIOLOGY



#MERITMATTERS



## WHY BIOLOGY?

Recent advances in the study of Biology have brought the subject to the forefront of contemporary sciences, integrating it with numerous disciplines. This has led to the emergence of new areas of study and research such as molecular biology, cell and developmental biology, computational biology, mathematical modelling of biological processes and diseases, biophysics and systems biology. All these are in the realm of SBASSE's Biology Programme.

## PROGRAMMES OFFERED

- MS
- PhD

## CAREER OPPORTUNITIES

- Biology students are placed at universities like Harvard, Cornell, Yale, Columbia, UChicago, Dartmouth, UIUC, ETH Zurich, McGill, North Carolina Chapel Hill, Texas A&M etc.
- Graduates receive competitive offers from academia and industry within Pakistan
- Several fully funded PhD scholarships have been received by graduates
- More than 70% of graduates placed in top-tier universities abroad for higher studies

## RESEARCH OPPORTUNITIES

- The Department's computational biologists employ mathematical and statistical tools and develop algorithms to mine large sets of data to obtain insights into problems such as genomic evolution and how cancer progresses
- Students pursue independent research supervised by faculty members engaged in basic as well as translational research
- An extensive menu of topics like cancer cell signalling, plant immunity, bacterial pathogenesis and diabetes, epigenetic, genome evolution, bioinformatics, and virology is offered
- Students may also design research projects in other (or newly emerging) areas after consulting with relevant expert faculty

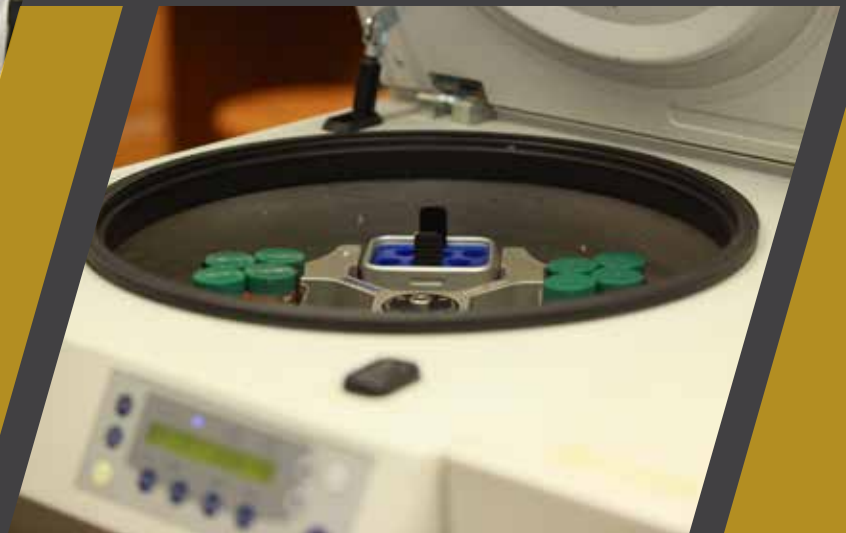




## Generous Tuition Fee Waivers for all MS Basic Sciences Students

- 45% for new students
- 50% for returning students

100% scholarship for PhD students



## FACILITIES

- State-of-the-art facilities and equipment that include confocal microscope, fluorescence activated cell sorter (FACS), fast protein liquid chromatography (FPLC) apparatus, MiSeq Next Generation Sequencer, conventional and real time thermo cyclers, ultrasonic bioruptor, gel documentation systems, high-speed centrifuges and tissue culture rooms
- Facilities for growing plants and flies
- A dedicated HPC facility for high performance computing (HPC) housed within the Bioinformatics Research Laboratory
- HPC nodes as well as General Purpose Graphical Processing Units (GPGPU) including NVIDIA's Grid K2 and Tesla K40C available at the Lab
- Several in-house software tools available online to leverage the lab's GPGPUs and HPCs
- Specialised labs have established Arabidopsis, fruit flies, mammalian cells as a model system





**Zain Umer**  
PhD Biology,  
2015



*“The PhD at LUMS not only taught me how to ask pertinent scientific questions, but it also enabled me to work under pressure. The programme gave me guidance and lots of independence to question, critique and innovate. Most importantly, it gave me a renewed confidence that dedication and hard work can lead to quality science research even in Pakistan.”*

## ADMISSION CRITERIA

Admission is purely merit-based and rests solely on the following criteria:

- Academic record
- GRE or LUMS Graduate Admission Test Performance\*
- Interview performance (if and where applicable)
- Completed online application form along with all supporting documents

\* For admission test details, visit: <https://admission.lums.edu.pk/graduate-programmes>

## FINANCIAL SUPPORT

- Loan Options
- Merit Scholarships
- External Scholarships (if available)
- Teaching Assistantships
- 45% Tuition Fee waiver for all new MS students in the Basic Sciences
- 50% Tuition Fee waiver for returning students
- 100% Scholarship for PhD students

For details, visit:

<https://financial-aid.lums.edu.pk>



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