

## Rank 2 - University of Hyderabad, Hyderabad

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School of Life Sciences

#### **A true blue talent Factory**

*Being one of the premier institutes for pursuing postgraduation and research in biotechnology, UoH's school of life sciences aims to disseminate and advance biotech knowledge by providing instructional and research facilities that fit corporate needs.*

School of Life Sciences at the University of Hyderabad (UoH) is ranked second in this year's survey. It is also ranked second in the faculty and industry interaction score.

Admission to MSc biotechnology program is done through JNU joint entrance examination. The department has more than 44 faculty members, with 27 of being PhD holders and having more than five years of work experience. The biotechnology department has an excellent record of 46 national publications and 191 international publications to its credit.

The school has multiple state-of-the-art laboratories for teaching and research in biology and biotechnology. It has invested Rs 3.60 crore for the year 2007-09. Students have access to advanced facilities like proteomics, genomics, bioinformatics and high-resolution microscopic facilities. Every teaching laboratory is equipped with sophisticated basic equipment for molecular and cell biology experiments, including culture, fermentation, proteomics and genomics. School of Life Sciences has the distinction of receiving the first-of-its-kind special funding from the Department of Biotechnology (DBT), Government of India, in the form of Center for Research and Education in Biology and Biotechnology. It has also received Rs 14.78 crore of government funded projects and Rs 9 lakh of industry-funded project between 2007-09. Research program of one of the faculty members is a part of the center of excellence on tuberculosis research funded by DBT to the tune of more than Rs 20 crore. Among other notable projects are, nanotechnology-based drug development under DST-sponsored nanotechnology initiative worth Rs 20 crore; DBT-sponsored project on development of peptide-based HIV therapeutics for Rs 90 lakh. Several other projects are funded by DST, DBT and ICMR with funding ranging from Rs 25-50 lakh each. Recently, an Indo-US project on development of curcumin as HIV microbicide has been granted with a support of Rs 50 lakh to Indian side.

The school offers seven post-graduate courses in biotechnology that include MSc in biotechnology, animal biotechnology, plant biology and biotechnology, MTech. in medical biotechnology and bioinformatics, integrated MSc in systems biology and also PhD program in biotechnology. About 160 students undergo training in the above courses every year. The candidates are selected on the basis of the very stringent criteria and procedures from amongst the applications received at an enviable average ratio of 1:150. The percentage of PG students from UoH, qualifying for their higher education at national level exams is quite high. For instance, seven out of 11 MSc biotechnology students, who appeared for the CSIR/NET exam in December 2008 were declared qualified. Many passed-out students from UoH are given admission into PhD programs in top universities elsewhere in the world. The school takes special interest to facilitate career opportunity for the students and invites various major companies like Biocon, Indian Immunologicals, Dr. Reddy's Labs and TCS, for conducting placement interviews. The biotech department has 50 faculty members with a wide range of experience in India and abroad, spanning a spectrum of research topics in frontier areas of biology and biotechnology. The entire faculty is successful in obtaining generous funding from multiple national and international agencies.

### **“Students are oriented in the profession of their interest”**

*Prof. Anand K Kondani, head, Department of Biotechnology, University of Hyderabad*

#### **What are the unique features of the biotech department?**

Biotechnology department has its focus on molecular diagnosis and therapeutic development against infectious and neurodegenerative diseases. Faculty members in the department have already gained some leads in these areas of research as it is evident from their high impact publications. The department with a mixture of experimental and theoretical scientists working together in the interface research areas, to help in understanding molecular basis of disease that in turn lead to discovery of targets in disease progression.

#### **What are the new modules you have added to align your education with industry needs?**

The department has added remedial courses on basic mathematics, communication skills, IPR and biosafety, bioentrepreneurship and electives like protein engineering and protein folding, molecular therapeutics, stem cell biology, evolutionary genetics, vaccines, computational biology, industrial and food biotechnology for MSc biotechnology students.

Can you tell us about the research projects that students or faculties have initiated at the biotechnology department?

MSc students are working on various projects that include technologies like, molecular cloning expression, protein purifications including nanoparticle development, stem cell biology and understanding protein structure and function using NMR. Research projects of the faculties are funded by various national and international agencies like DBT, DST, India-US, Indo-German program; include biology of tuberculosis, HIV, stem cells, ribosome structure and function etc. with an aim to develop therapeutics and drug delivery.

#### **What are the initiatives taken by the institute to familiarize the students with the industry?**

The university is associated with conducting industry event BioAsia every year, where students are encouraged to participate in innovative project development as well as to interact with technocrats from industry. The university also conducts short visits to industry and experts from industry are involved in teaching lab-oriented courses such as bioprocess engineering and technology, and transgenic development. In addition, the department encourages the students to undergo summer training at the industries of their choice.

#### **What percentage of your students on an average get placements in biotech companies after post-graduation and how many prefer to go for higher studies?**

Students are oriented in the profession of their interest, in either research or in industry. Accordingly they have been mentored to place themselves for JRF test, advanced education abroad and in industrial training.

#### **What are your views on the current talent crunch in the biotech industry?**

There is a need for innovative and application-oriented project development to be implemented through cooperation between industry and academic institutions. It would be also useful to devise a training program particularly aimed at helping technical assistants, who could be absorbed in industry. This will enrich the industry-oriented skills and promote knowledge and innovation.

Jahanara Parveen