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Volume-2

EVALUATIVE REPORT

Department of Biotechnology

for

ASSESSMENT AND ACCREDITATION

Submitted to

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE



**JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
NOIDA**

17 September, 2015

Evaluative Report of the Department

1. **Name of the Department** Biotechnology
2. **Year of establishment** 2002
3. **Is the Department part of a School/Faculty of the university?**

JIIT is a unitary University. It has departments that include Department of Biotechnology, and also a Business School.
4. **Names of programmes offered**
 - (i) Ph.D.
 - (ii) M. Tech. (Biotechnology)
 - (iii) Dual degree B. Tech.-M. Tech. (Biotechnology)*
 - (iv) B. Tech. (Biotechnology)

*[After UGC circular, July 2014, regarding standardisation of nomenclature of degrees, this programme will run as Integrated M. Tech. (Biotechnology) w.e.f. 2015-16]
5. **Interdisciplinary programmes and departments involved**

None, however the curriculum contains courses from other departments namely, Electronics and Communication Engineering (ECE), Computer Science and Engineering and Information Technology (CSE & IT), Mathematics, Physics and Materials Science and Engineering (PMSE), Humanities and Social Sciences (HSS).
6. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

None
7. **Details of programmes discontinued, if any, with reasons**

None in the last 4 years
8. **Examination System: Annual/Semester/Trimester/Choice Based Credit System**

Semester, along with Choice Based Credit System
9. **Participation of the department in the courses offered by other departments**

The department offers following courses to the other departments:

Course Title	Department
UG Programmes	
Environmental Studies	CSE, IT, ECE
Machine Learning Tools in Bioinformatics	CSE, IT, ECE
Biocomputing and Applications	CSE, IT, ECE
Clinical Trials and Database Management System	CSE, IT
Intellectual Property Rights and Bioethics	CSE, IT, ECE
Industrial Waste Management	CSE, IT, ECE
PG and Ph.D. Programmes	
Biosensors	ECE, PMSE
Ethics, IP issues and Plagiarism	All Ph.D. Programmes

10. Number of teaching posts sanctioned, filled and actual (Professors / Associate Professors / Asst. Professors/others)

	Sanctioned [#]	Filled	Actual (including CAS & MPS)
Professors	3	01	01
Associate Professors	6	10	10
Assistant Professors	14	12	12
Teaching Assistants	-	-	07*

#JIIT follows flexible cadre structure like IITs

*Full time Ph.D./ M. Tech. students

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Yrs. of Experience	No. of Ph.D. students guided (last 4 years)
Sanjeev K. Sharma	Ph.D., (Imperial College, London)	Professor & HOD	Regulatory peptides, and Bioinformatic	18	3 (ongoing)
Sanjay Gupta	Ph.D. (Delhi Univ.)	Assoc. Prof.	Viral diseases, and Functional Genomics	15	4 (awarded) 4 (ongoing)

Neeraj Wadhwa	Ph.D. (Delhi Univ.)	Assoc. Prof.	Microbial and Food Technology	18	2 (awarded) 1 (ongoing)
S. Krishna Sundari	Ph.D. (Barkatullah Univ. Bhopal)	Assoc. Prof.	Microbial and Environmental Biotechnology	15	3 (ongoing)
Sudha Srivastava	Ph.D. (JNU)	Assoc. Prof.	Biosensors, Nano-biotechnology	13	2 (awarded) 1 (ongoing)
Rachana	Ph.D. (IIT Bombay)	Assoc. Prof.	Natural products therapeutics	9	3 (ongoing)
Indira P Sarethy	Ph.D. (MK Univ. Madurai)	Assoc. Prof.	Microbial and Plant Biotechnology	14	1 (awarded) 2 (ongoing)
Reema Gabrani	Ph.D. (NII Delhi)	Assoc. Prof.	Protein Engineering	12	1 (awarded) 3 (ongoing)
Sujata Mohanty	Ph.D. (BHU)	Assoc. Prof.	Molecular Genetic and Genomics	16	2 (ongoing)
Vibha Rani	Ph.D. (JNU)	Assoc. Prof.	Medical Biotechnology	9	3 (ongoing)
Pammi Gauba	Ph.D. (Rohilkhand Univ.)	Assoc. Prof.	Environmental Biotechnology	20	1(Ongoing)
Vibha Gupta	Ph.D. (Vrije Universiteit Brussel, Belgium)	Asstt. Prof.	Structural Biology	19	1(Ongoing)
Shweta Dang	Ph.D. (Jamia Hamdard Univ.)	Asstt. Prof.	Novel Drug Delivery systems	9	3 (Ongoing)
Kamal Rawal	Ph.D. (JNU)	Asstt. Prof.	Bioinformatics,	8	2 (Ongoing)
Nidhi Gupta	Ph.D. (IIT Delhi)	Asstt. Prof.	Environmental Biotechnology	8	1 (Awarded) 1 (Ongoing)
Ashwani Mathur	Ph.D. (IIT Delhi)	Asstt. Prof.	Process Engineering	8	2 (Ongoing)
Shalini Mani	Ph.D. (CCMB, Hyderabad)	Asstt. Prof.	Medical Biotechnology	5	1 (Ongoing)
Smriti Gaur	Ph.D. (JIIT Noida)	Asstt. Prof.	Microbial Biotechnology	5	None
Chakresh Kumar Jain	Ph.D. (Jiwaji Univ.,	Asstt. Prof.	Bioinformatics	12	2 (Ongoing)

	Gwalior)				
Susinjan Bhattacharya	Ph.D. (UAS Bengaluru)	Asstt. Prof.	Microbial Biotechnology	12	None
Priyadarshini	Ph.D. (JUIT Waknaghat)	Asstt. Prof.	Medical Biotechnology	5	1 (Ongoing)
Garima Mathur	Ph.D. (IIT Roorkee)	Asstt. Prof.	Environmental Biotechnology	5	None
Manisha Singh	M.PT (CCS Univ. Meerut)	Asstt. Prof.	Medical Biotechnology	9	None

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors

None

13. Percentage of classes taken by temporary faculty – programme-wise information:

Nil

14. Programme-wise Student Teacher Ratio

Undergraduate Programme: 14:1

Postgraduate Programme: 12:1

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

	Sanctioned	Filled	Actual
Technical	4	4	6 (includes 2 temporary)
Administrative	Centrally managed; shared by all departments		

16. Research thrust areas as recognized by major funding agencies

- Medical Biotechnology (Infectious diseases and Life-style disease biology, Diagnostics/Biosensors, Novel Drug Delivery System, Genome analysis)
- Plant & Microbial Biotechnology (Natural Products and Molecular Mechanisms, Bioremediation, characterization of Biodiversity)

To strengthen the above listed research areas, a Center for Emerging Diseases, and a Research Group (Plant & Microbial Biotechnology) have been formed:

Centre for Emerging Diseases

‘Centre for Emerging Diseases’ addresses the questions of molecular mechanism/pathogenesis/host pathogen interactions of emerging and re-emerging viral (Chikungunya & Chandipura) and bacterial pathogens (*Mycobacterium* and others) and life style diseases such as obesity & diabetes, cancer, cardiovascular and CNS disorders using both wet laboratory and tools of computational biology/bioinformatics (genomics, proteomics and evolutionary approaches). Research emphasis is also on peptide based therapeutics, regulatory peptides, biosensor and ELISA based diagnostics, and drug encapsulated nanoparticles and nanoemulsions.

Plant & Microbial Biotechnology

Plant & Microbial Biotechnology group addresses growing concern over environmental pollution, depleting natural resources and increasing demand of natural bio-products of therapeutic and industrial importance (food flavours-microbial production of Vanillin and probiotics; enzymes -Laccase, protease, tannase, polyphenol oxidase, keratinase from microbial sources, biosynthesis of chitosan, cellulose from microbial sources for bioprocess applications, bio-inoculants of plant and microbial origin for plant growth promotion and antibiosis, microbial remediation of organophosphate pesticides, biocatalyst for the removal of nitrogen and sulphur from petroleum products, phytoremediation of heavy metals-copper (Cu) and lead (Pb); screening for antimicrobial compounds-peptides/antibiotics).

17. Number of faculty with ongoing projects from

- a. National funding agencies: 11
- b. International funding agencies: None
- c. Total grants received: 405.16 Lac

Ongoing Projects: National funding agencies

S. No.	Granting Agency	Duration	Title	Grant (Rs in Lac)	PI/Co PI
1.	DST	2014-17	Development of a biocatalyst for the removal of nitrogen and sulphur from diesel	24.90	Nidhi Gupta
2.	DBT	2014-17	Development of reagents for simple immunochemical tests for the detection of Chikungunya infection	18.00	Sanjay Gupta

3.	DST	2014-16	Nanoparticles based amper-ometric biosensor for detection of thyroid dys-functioning	37.30	Sudha Srivastava/ Vibha Gupta
4.	DBT	2013-16	Purification of Chikungunya virus nsP3 Protein for peptide based inhibitor and structural studies	68.60	Sanjay Gupta / Sanjeev K. Sharma/ Vibha Gupta, /V.K. Chaudhary (UDSC)
5.	DBT	2013-16	Structural Biology of CysE from pathogenic organisms - Potential for rational drug design	40.50	Vibha Gupta / Punit Kaur (AIIMS)
6.	DST	2014-17	Studies on the phylogenomics and population genomics of indian Drosophila	34.10	Sujata Mohanty
7.	DBT	2013-16	Development and evaluation of green tea catechins based intravaginal nanoemulsion gel for the treatment of urinary tract infections	23.53	Shweta Dang / Reema Gabrani/ Javed Ali (Jamia Hamdard)
8.	DBT	2012-15	Stage specific microRNA profiling from developing chick heart	41.65	Vibha Rani
9.	DBT	2012-15	Effect of curcumin on cardiac hypertrophy	29.89	Vibha Rani
10.	ICMR	2015-18	Identification of cellular targets of Chikungunya virus non structural proteins (Sanctioned)	34.1	Sanjay Gupta/ Reema Gabrani/ Sanjeev K Sharma
11.	ICMR	2015-18	Development of inhibitors to target	20.0	Vibha Gupta/ Dr.

			glyoxylate and methyl- citrate cycles essential for persistence of Mycobacterium tuberculosis (Sanctioned)		Chittaranjan Rout (JUIT, Wagnaghat)
12.	ICMR	2015-18	Study of mitochondrial DNA copy number variation, its possible genetics and their correlation with pathophysiological features of diabetes mellitus: A pilot study (Sanctioned)	26.0	Shalini Mani/ Dr Pankaj Bansal, (Sharda University) / Dr Mohd Rashid, (Sharda University)
13.	DBT	2013-15	Ability of select PGPM strains to remediate organophosphate pesticides commonly used in agriculture	6.59	Krishna Sundari

Projects Completed during the period of evaluation (last four years):

Number of completed projects: 09

Total grants: 167.59 Lac

S. No	Granting Agency	Duration	Title	Grant (Rs in Lac)	PI/Co PI
1.	DBT	2013-15	Development of a biocatalyst for dearomatization of diesel	6.92	Nidhi Gupta/ Sanjay Gupta/Co-PI: D.K. Adhikari (IIP, Dehradun)
2.	DBT	2011-14	Nanoparticle based Drug delivery system of some antiepileptic drugs for brain drug delivery through nasal route	25.17	Shweta Dang/ Manisha Singh/ Javed Ali (Hamdard University)

3.	DBT	2010-14	Formulation of Microbial Consortia With Parallel Biofertilizer and Biocontrol Properties	24.22	Krishna Sundari/ Reena Singh (The Energy and Resources Institute)
4.	DST	2010-13	Viral-viral and viral-host protein interactions in chandipura virus mediated encephalitis	35.57	Sanjay Gupta/ Reema Gabrani/ Amita Gupta
5.	AICTE	2009-12	Mapping viral host protein interactions of Chikungunya virus	15.45	Sanjay Gupta/ Sanjeev K. Sharma
6.	AICTE	2009-12	Designing a Nanoparticles Based Glucose Biosensors	8.4	Sudha Srivastava/ Nidhi Gupta
7.	DST	2009-12	Cardio Protective Properties of Curcumin: Molecular Interaction of Cardiac Transcription Factors	19.99	Vibha Rani
8.	AYUSH	2009-11	Scientific Documentation and digitization for selected Indian medicinal plants for antidiabetic and other activities	7.00	Rachana
9.	DBT	2008-12	Mapping of interactions among Chikungunya virus proteins	24.87	Sanjay Gupta/ Reema Gabrani/ Vijay K. Chaudhary

18. Inter-institutional collaborative projects and associated grants received

a) National collaboration: Total Grant received: 159.17 Lac

S. No	JIIT Faculty	Collaborating Faculty	Project Title (Granting Agency; Duration)	Grant Received (Rs. in Lac)
1	Dr Sanjay Gupta	Prof V.K.Chaudhary (DU) / Dr S. Chatterjee	Development of reagents for simple immunochemical tests for the detection of	18 (JIIT) Total Grant: 141

		(ICMR Virus Unit Kolkata)	Chikungunya infection (DBT; 2014 -17)	
2	Dr Vibha Gupta	Dr Punit Kaur AIIMS, New Delhi	Structural Biology of CysE from pathogenic organisms – Potential for rational drug design (DBT; 2013-16)	40.50 (JIIT)
3.	Dr Nidhi Gupta Dr Sanjay Gupta	Dr D.K. Adhikari, Indian Institute of Petroleum, Dehradun	Development of a biocatalyst for dearomatization of diesel (DBT; 2013-15)	6.92 (JIIT)
4	Dr Shweta Dang	Dr Javed Ali, Jamia Hamdard, New Delhi	Development and evaluation of green tea catechins based intravaginal nanoemulsion gel for the treatment of urinary tract infections (DBT; 2013-16)	23.53 (JIIT)
5.	Dr Krishna Sundari	Dr Reena Singh, The Energy and Resources Institute (TERI), New Delhi	Formulation of Microbial Consortia With Parallel Bio-fertilizer and Biocontrol Properties (DBT; 2010-14)	24.22 (JIIT) Total Grant: 57.39
6.	Dr Vibha Gupta	Dr Chittaranjan Rout, JUIT Waknaghat	Development of inhibitors to target glyoxylate and methyl- citrate cycles essential for persistence of Mycobacterium tuberculosis (Sanctioned) (ICMR; 2015-2018)	20.00 (JIIT)
7.	Dr Shalini Mani	Dr Pankaj Bansal, Dr Mohd Rashid, Sharda University	Study of mitochondrial DNA copy number variation, its possible genetics and their correlation with pathophysiological features of diabetes mellitus: A pilot study (Sanctioned) (ICMR; 2015-2018)	26.0 (JIIT)

b) International collaboration:

None

In addition to the above, faculty members are engaged in collaborations at individual level (without grants/ funds)

a) National Collaborations:

S. No.	Faculty (JIIT)	Faculty/ Scientist from other Institutions	Subject Area	Outcome of the collaboration (Research Publications)
1	Vibha Rani	Manish Sharma, Defence Institute of Physiology and Allied Sciences (DIPAS), DRDO	Cardiovascular research	2
		Umesh C. S. Yadav, School of Life Sciences, Central University of Gujarat, Gandhinagar	Cardiovascular research	2
2	Ashwani Mathur	Subhash Chand, Department of Bio-chemical Engineering and Bio-technology, IIT Delhi	Bioprocess engineering	2
		Sanjay Dhakate, Physics and Engg. of Carbon, Department of Materials Physics and Engineering, CSIR-NPL	Biopolymer Sciences	2
3	Chakresh K Jain/ Sanjeev K Sharma	Gulshan Wadhwa, Deputy Director, DBT	Bioinformatics	6
4	Chakresh K Jain	Yamuna Prasad, Department of Computer Science and Engineering, IIT Delhi	Application of CSE in bio-informatics	4
		Vijay Khare, Department of Electronics and Engineering, JIIT,	Biomedical research	1
5	Shalini Mani	Pankaj Bansal, Sharda University	Biomedical research	2

b) International collaboration:

S. No.	Faculty/ Scientist (JIIT)	Collaborating Faculty	Subject Area	Outcome of the collaboration (Research Publications)
1	Sanjeev K Sharma Sanjay Gupta	Michael Goodfellow, School of Biology,	Microbial	1

	Indira P Sarethy	University of Newcastle, UK	Biotechnology	
2	Sujata Mohanty	Malcolm D Schug, Biology Department, Univ. Of North Carolina, USA	Evolutionary Biology	1
		John F. Baines, MaxPlank Institute for Evolutionary Biology, Germany		1
		Wolfgang Stephan, Dept. of Evolutionary Biology, Ludwig-Maximilians University, Germany		1

Details of the outcome from national and international collaborations are given in **Annexure-I/BT**

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.;

S. No.	Granting Agency	Duration	Title	Grant (Rs in Lac)	PI/Co PI
1.	AICTE (MODROB)	2008-09	Up gradation of Comparative and Functional Genomics Lab	7.00	Sanjeev K Sharma/ Sanjay Gupta

20. Research facility / centre with

- **State recognition:** None
- **National recognition:** None
- **International recognition:** None

21. Special research laboratories sponsored by / created by industry or corporate bodies

Nil

22. Publications:

1	Total Publications: Peer reviewed	239
	International Journals	229
	National Journals	10
2	Monographs	02
3	Chapters in Books	21
4	Edited books	02

5	Books with ISBN no*	04
6	Number of Publications listed in International Databases	239
7	Citation Index (as per Google Scholar)	
	Range	1 - 59
	Average	9.0
8	Citation Index (Scopus indexed publication)	
	Range	1 - 34
	Average	6.9
9	SNIP (Scopus indexed Journals)	97.68
10	SJR (Scopus indexed Journals)	82.62
11	Impact Factor (Scopus indexed Journals)	
	Range	0 – 8.8
	Average	1.64
12	H-index (Scopus indexed Journals)	
	Average	42.9

List of publications (Impact Factor Reference Year 2014), details of edited books and chapters is attached as **Annexure-II/BT** and publications citation index (Scopus and Google Scholar) is attached as **Annexure-III/BT**.

23. Details of patents and income generated

Patent filed: Sudha Srivastava and Shikha Sharma (2010) “**Novel process to enhance thermal stability of enzyme nanoparticles**” Indian Patent Application No 2782/DEL/2010. Filing date: 23-11-2010

24. Areas of consultancy and income generated

Nil

25. Faculty selected nationally/internationally to visit other laboratories / institutions / industries in India and abroad

Sanjeev K Sharma (2012)

First edition “Indian Future Leaders Programme”, Spain-India Council Foundation, Spain

Nominated and selected: Member Delegate. Participated in various Institutional meetings/ Round-table discussions of Biotechnology sector (academia and research), and visited

- BBVA Bank Innovation Centre, Madrid
- Instituto de Empresa Business School, Madrid
- Cervantes Institute, Madrid
- Santander Bank, Madrid
- Spanish Ministry for Foreign Affairs, Madrid

- Valladolid University/Meeting with the Rector, Valladolid
- Casa de la India, Valladolid
- Alliance 4 Universities (A4U), Barcelona
 - Pompeu Fabra University (UPF)
 - Universitat Autònoma de Barcelona (UAB), Barcelona, Meeting with Vice Rector, International Relations / Presentation, Department of Biotechnology, IIIT, Noida)

Invited participation, “Regional Consultation on the proposed National Biotechnology Regulatory Authority (NBRA)”, DBT, GOI, in association with Biotech Consortium India Limited (BCIL), June 2008.

Sanjay Gupta

- Invited to Biochemistry Department, University of Delhi South Campus, (2013) to deliver talk on “Interaction Technologies”
- Invited to Biochemistry Department, University of Delhi South Campus, (2012) to deliver talk on “Yeast two hybrid and other protein interaction technologies”

S. Krishna Sundari

- Conducted a Short course on “Mycorrhizae”, Molecular Ecology Laboratory, University of Florida, Gainesville, USA (2006)

26. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other (please specify)

a) National committees

Faculty	Role
S. Krishna Sundari	Member Project Advisory committee for project sponsored by DBT, Govt. of India
	Project reviewer for projects submitted by individual PI's (project investigators) to DBT, Govt. of India under the Microbiology (Biofertiliser and biopesticides) division.

b) International committees: None

c) Editorial Boards: None

d) Any other

Faculty	Role
Sanjeev K. Sharma	Member, Board of Studies (BoS)- Biotechnology (2012-13 & 14), Mahamaya Technical University, Noida
	External Expert, Research Degree Committee (RDC): Biotechnology (2012-13 & 14), Mahamaya Technical

	University, Noida
	Invited for INDO-SPANISH POWER BREAKFAST, Effective Implementation of the existing PoC between DBT (India) and CDTI (Spain) for Technological co-operation in the field of Biotechnology, “Opportunities for Industrial R&D Co-operation in Biotechnology, 10 th Edition of the BioAsia event, Hyderabad, India, January 2013.

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programmes, workshops, training programmes and similar programmes).

To recharge the faculty, Department organizes conferences, workshops, seminars, expert talks, refresher courses, faculty development programmes, etc., at IIIT. In addition, faculty members participate in these activities outside also. Details of participation by faculty of the Department are listed in **Annexure-IV/BT**.

28. Student projects

- **Percentage of students who have done in-house projects including interdepartmental projects**

100%

- **Percentage of students doing projects in collaboration with other universities/ industry / institute**

0%

29. Awards/ recognitions received at the national and international level by,

A. Faculty

S. No.	Name of Faculty	Details of the Award/Recognition
1	Ashwani Mathur	<ul style="list-style-type: none"> • Indian Institute of Chemical Engineers (IICChE) Awards 2012: Sisir Kumar Memorial for second best technical paper in ‘Indian Chemical Engineers’ • IICChE NRC Award 2012 for second best Best Paper in ‘Indian Chemical Engineers’
2	Garima Mathur	<ul style="list-style-type: none"> • Gold Medallist in M.Sc. (Biotechnology), Panjab University (2002)
3	Krishna Sundari	<ul style="list-style-type: none"> • Received Indo-US professorship award IUSSTF in coordination with American Society of Microbiology (ASM), Washington D.C. (2005)

		<ul style="list-style-type: none"> • Post Doctoral Research Scientist Fellowship from Indo-French Centre for the Promotion of Advanced Research (IFCPAR) to work at INRA, France (2000-2001)
4	Sanjay Gupta	<ul style="list-style-type: none"> • Gold Medallist B.Sc. (Hon., Microbiology) Delhi University (1991)
5	Shalini Mani	<ul style="list-style-type: none"> • Endeavour Research fellowship, By Australian (2015). • 2nd Prize, Oral Presentation, International Conference on Health, Environment and Industrial Biotechnology (Biosangam), MLNIIT, Allahabad, (Nov 21-23, 2013).
6	Sudha Srivastava	<ul style="list-style-type: none"> • DBT Post Doctoral Fellowship (2002) • Jawaharlal Nehru Memorial Fellowship for Research (2001)
7	Sanjeev K. Sharma	<ul style="list-style-type: none"> • Honorary Diploma in Biochemistry (DIC), Imperial College, London (1999) • The Harold Hyam Wingate Foundation- Research Scholarship, U.K. (1994) • Overseas Research Studentship (ORS) Award, The Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom (CVCP) (1992) • The W. Garfield Weston Foundation-Scholarship, U.K. (1992) • Nehru Centenary British Fellowship - Molecular Biology, British Council, U.K. (1991)

B. Doctoral / post doctoral fellows

S. No.	Name of Ph.D. Scholar	Detail of the Conference / Technical Event / Technical competition	Nature of the award
1	Sreejith Rajasekharan	64 th Lindau Nobel Laureate Meeting organized by DST, Govt. of India & Council for the Lindau Nobel Laureate Meetings, Germany, June 29 - July 4, 2014.	Selected at national level by DST/Participated as student delegate
2	Shikha Sharma	Selected as Marie Curie Experienced Researcher in the PROSENSE network, Biomedical Diagnostic Institute, Dublin City University, 2014	Marie Curie Experienced Researcher Post Doctoral Fellowship

3	Sreejith Rajasekharan	Selected for German Cancer Research Center (DKFZ) post doctoral fellowship, German Cancer Research Center, Heidelberg, Germany, 2015-17.	DKFZ Post Doctoral Fellowship
4	Jyoti Rana	Selected for Arturo Falaschi ICGEB postdoc fellowship. International Centre for Genetic Engineering and Biotechnology campus, Trieste, Italy 2015-17.	Arturo Falaschi Post Doctoral Fellowship
5	Kushagr Punyani	Selected for Marie Curie Early Stage Researcher fellowship. He is pursuing Ph.D from Solid State Physics, Faculty of Engineering, Lund University(2014-ongoing).	Marie Curie Early Stage Researcher Fellowship
6	S. Basu, Mamta Pant and Rachana	IC LIFE 2014, Department of Biotechnology, IIIT Noida, August 29-30, 2014.	1 st Prize, Oral Presentation
7	M. Pant, S. Basu and Rachana	IC LIFE 2014, Department of Biotechnology, IIIT Noida, August 29-30, 2014.	1 st Prize, Poster Presentation
8	Anuradha Singh, Neeraj Wadhwa	National Conference, “Energy, Environment & Biotechnology Research”-NCEEER-2013at Mewar Institute of Management, Ghaziabad, October 5-6, 2013.	1 st Prize, Oral Presentation
9	Neha Atale and Vibha Rani	National Seminar, “Transcriptomics: A Recent Era”, BCS- Lucknow, April 7, 2012.	1 st Prize, Oral Presentation

C. Students

S. No.	Name of Students (M. Tech. / B.Tech.)	Detail of the Conference / Technical Event / Technical competition	Nature of the award
1	Deepti Sharma, Aayush Saraswat, Udit	International Conference, Life Science & Bioengineering ICLSBE 2014, Department of Biotechnology, Institute of Applied Medicine and Research, Ghaziabad, November 22-	1 st Prize, Poster Presentation

	Srivastava, Rachana and Manisha Singh	23, 2014.	
2	Saudamini Raina and Vibha Gupta	Biogenesis-3 “Emerging Trends in Medical Biotechnology and Health Care”, Department of Biotechnology, College of Engineering & Technology, IILM, Greater Noida, March 6-7, 2014	2 nd Prize, Oral Presentation
3	Payal Nag , Rashi Rajput, Sonam Dhaliwal, Sachin Kumar, Deepak Prajapat, Manisha Singh	International Conference, "Future Prospects of Advancements in Biological Sciences, Health Issues & Environmental Protection", Indira Gandhi Pratishthan, Lucknow, February 7-8, 2014	1 st Prize, Oral Presentation
4	Garima Naswa , Abhisarika Patnaik	International Conference, "Future Prospects of Advancements in Biological Sciences, Health Issues & Environmental Protection", Indira Gandhi Pratishthan, Lucknow February 7-8, 2014	3 rd Prize, Poster Presentation
5	Kritika Sharma	Online course, “Writing in the Sciences”, Stanford University through Stanford open Edx, December, 2013.	Statement of Accomplishment for the course
6.	S. Thakur , I. Wadi, N.Goel, A. Jain, S. Basu, M. Pant and Rachana	International conference “Future Prospects of Advancements in Biological Sciences, Health Issues & Environmental Protection” at Lucknow, Sponsored by Council of Science & Technology, Govt. of Uttar Pradesh, organized by CytoGene Research & Development, Lucknow and Society of Biosciences, Health issue and Environmental protection [SBHE], Lucknow. February 7-8 2014,	2nd prize poster presentation
7.	K. Kumar , A.Negi and Rachana	International conference IC LIFE 2014, organized by Department of Biotechnology, IIIT Noida, 29-30 August 2014	2nd prize, poster presentation
8.	S. Thakur and Rachana	International conference IC LIFE 2014, organized by Department of	2nd prize, poster

		Biotechnology, IIIT Noida, August 29-30 2014	presentation
9.	K. Kumar, A.Bhagat, M. Singh and Rachana	International conference IAMR, Ghaziabad "International Conference on Life Sciences and Bioengineering, November 22-23, 2014	Appreciation Award for poster presentation
10.	Shuchi Arora	"The Future we want", UNRIO +20 India certification programme jointly conducted by IARC, Mumbai & UN Conference on Sustainable Development (UNSCD), June 2013	Gold Medal - UNRIO+ 20 India Hall of Fame, ational winner.
11.	Saudamini Raina, Vandana Yadav, Sanjeev K Sharma	National Conference, BioLife, Sanjay Gandhi Post Graduate Intitute of Medical Sciences; Lucknow, March 9-10, 2013.	1 st Prize, Oral Presentation
12.	Gupta, A., Gupta, V. , Gupta, S. Sharma, S. K. Michael Goodfellow and Sarethy, I.P.	National Symposium, "Microbes in Health and Agriculture", UGC Resource Networking, Jawaharlal Nehru University, New Delhi, India, pp 102, March 12-13, 2012.	2 nd Prize, Poster Presentation
13	Shikha Sharma, Ragini Raghav, Pracheta Anand, Manisha Nassa, Sudha Srivastava	National Conference, "Nanoscience & Nanotechnology <i>ALIGARH NANO-II</i> ", Aligarh Muslim University, Aligarh, March 10 - 12, 2012.	1 st Prize, Poster Presentation
14	Jain R, Gupta S, Pramod K, Ali J, Gabrani R and Dang S	AICTE Sponsored National Seminar, "New Horizons in Drug Delivery and Development", Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Jamia Hamdard, New Delhi, September 17-18, 2011.	1 st Prize, Poster Presentation
15	Ramya Jain, Sonal Gupta, Pramod K, Javed Ali, Reema	National Seminar, "Industry Expectations From Pharmacy College", ITS Paramedical (Pharmacy) College, Ghaziabad, U.P. August 5-6, 2011.	3 rd prize, Poster Presentation

	Gabrani and Shweta Dang		
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30. Seminars/ Conferences/Workshops organized and the source of funding (national/ international) with details of outstanding participants, if any.

1. Workshop on "Patent Search", January 8, 2015 Funding Agencies: IIIT Outstanding Participants: Mr. Bijay Kumar Sahu , Deputy Manager, IPR, NRDC, Govt of India, New Delhi
2. Workshop on "Emerging Trends in Biomathematics", November 29, 2014 (jointly organized by Biotechnology and Mathematics department, IIIT and NNCMB-Delhi Node Funding Agencies: SERB, DST, Govt. of India Outstanding Participants: Prof. Peeyush Chandra , IIT, Kanpur; Prof. Sitabhra Sinha , IMSc, Chennai; Prof. Subhadip Raychaudhary IIIT-Delhi; Prof. Karmeshu JNU, New Delhi
3. Workshop on "IPR Awareness", August 23, 2014 Funding Agencies: IIIT Outstanding Participants: Mr. Chandrashekhar Tanikella , Director & Head, PFC, TIFAC, GOI, New Delhi; Mr. Bijay Kumar Sahu , Deputy Manager, IPR, NRDC, Govt of India, New Delhi; Mr. Abhishek Sen , Senior Patent Attorney & Head-Patent Operations, S. Majumdar & Co.
4. International conference IC LIFE , August 29-30, 2014, Funding Agencies: IIIT Outstanding Participants: Dr. A Fernanadis Asso. Director MERC Singapore, Dr. Julian Cadia University of Maryland, Baltimore, Dr. Pradeep Srivastava , Scientist and Deputy Director, CDRI, Prof. J Bellare , IIT Bombay, Dr. V Menon and S P Singh , BHU, Dr. S Panda , IIT Kanpur, Dr. Manish , Delhi University , Prof. Y K Gupta , AIIMS, Delhi, Dr. P Katiyar IIT Roorkee, Dr. B. K. Murthy Executive director, CDAC, NOIDA, Dr. Om Parkash National JALMA Institute for Leprosy and Other Mycobacterial Diseases, Dr. Gaurav Pathak Glenmark Pharmaceutical Ltd Nashik
5. Expert Interaction-"Innovative approaches for biomedical research-students of today are research leaders of tomorrow", October 29-30, 2013 Funding Agencies: IIIT, Noida Outstanding Participants: Prof. Madhav Bhatia , University of Otago, Christchurch, New Zealand, Prof. Surya Pratap Singh , BHU, India
6. International Conference "Bioproducts and the OMICS Revolution", March 16-17, 2013 Funding Agencies: IIIT and Scientity Inc., Outstanding Participants: Prof. Michael Goodfellow , Newcastle

	University, U.K., Prof. Rup Lal , Delhi University, Prof. A.K. Srivastava , IIT, Delhi, Dr. Amit Saxena Head, Molecular Medicine Department, Reliance Life sciences, Mumbai, Dr. Gulshan Wadhwa , Joint Director, DBT, GOI, Dr. Sanjay Shahi - Xcelris Genomics, Ahmedabad, Dr. Jyoti Bajpai Dikshit Strand Life Sciences, Bangalore
7.	Workshop, 'Virtual Workshop on Scientific Writing & Publishing', September 28, 2012 Funding Agencies: IIIT Outstanding Participants: Prof. Rup Lal , Delhi University; Dr. Sunil Lal , Member ASM International Outreach Board, ICGB, New Delhi
8.	Workshop, 'Flow Cytometry and Cytometric Applications', August 6, 2012 Funding Agencies: IIIT Outstanding Participants: Dr. Amitav Mohanthy , Application Scientist, BD Biosciences.
9.	Workshop, "IP Awareness and Innovation", February 21, 2012 Funding Agencies: IIIT Outstanding Participants: Prof. R. Saha Advisor to GIIP, New Delhi; Dr. Deepa Kachroo Tikur Director Programmes, GIIP
10.	International Conference, "Bioproducts from Natural Sources", February 3, 2011 Funding Agencies: IIIT and Scintity Inc., Outstanding Participants: Prof. Michael Goodfellow , Newcastle University, UK; Prof. Subhash Chand IIT, Delhi; Dr. Javed Ali Jamia Hamdard University, Dr. V.K Tripathi ,CEO - Oscar Ozone Group
11.	Workshop, "Plant Bioproducts & Industrial Scale-up", July 5 - 9, 2010 Funding Agencies: IIIT Outstanding Participants: Dr. Anjanii Kumar , Thar Biotech Ltd., Gurgaon; Dr. V.K. Tripathi , Vice-President (R&D), Sanat Products Ltd., U.P.; Lalit Mehta , RITES, Gurgaon; Dr. Sanjeev Kalra , Monsanto India Ltd.; Dr. Gulshan Wadhwa , Principal Scientific Officer, DBT, GOI, Dr. Suresh , PSO, TIFAC, DST, Govt. of India; Dr. Arjun Ram , Scientist E-2, IGIB, New Delhi; Dr. Yogi Raj , Consultant, Nesting Ideas

31. Code of ethics for research followed by the departments

Department follows the code of ethics defined by the Institute. The ethics lays strong emphasis that all research work/theses must be original and work by others is duly acknowledged. To enhance quality of research anti-plagiarism software is used. Research scholars and students before submitting their Ph.D. theses, dissertations, Project reports and research papers for award/publications check manuscripts for plagiarism. Department has IBSC Committee (Institutional Biosafety Committee) constituted under the auspices of Department of Biotechnology, Govt. of India, which meets regularly to generate

awareness and monitor compliance of bio-safety aspects and regulations. IEC (Institutional Ethical committee), constituted following ICMR guidelines ensures that the research involving human subjects/samples is conducted in ethical ways.

32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received*	Selected		Pass Percentage	
		Male	Female	Male	Female
B. Tech.					
2007-11	22629	22	38	95.45	100
2008-12	32517	12	27	100	100
2009-13	31710	16	45	87.5	95.56
2010-14	26650	14	55	85.71	87.27
Dual Degree B.Tech- M. Tech. (BT)					
2006-11	19672	13	16	100	100
2007-12	22629	15	18	86.67	100
2008-13	32517	5	6	100	100
2009-14	31710	8	24	100	87.5
M. Tech.					
2014-15	41	4	14	Started in 2014	
Ph.D.					
Upto 2014	762	13	57	Awarded Continuing Discontinued	09 (3M, 6F) 31 (3M, 28F) 30 (7M, 23F)

*Applications for the UG programmes are received without any choice of programme. The choice of the programme is exercised by the candidate during counselling.

33. Diversity of students: (Last four year)

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
B.Tech. (Biotechnology)				
2011	NA	3.77	96.23	NIL
2012	NA	NIL	100	NIL
2013	NA	2.17	95.66	2.17
2014	NA	3.57	96.43	NIL
Dual Degree B.Tech- M. Tech. (BT)				
2011	NA	NIL	100	NIL

2012	NA	3.45	96.55	NIL
2013	NA	NIL	100	NIL
2014	NA	8.11	91.89	NIL
M. Tech. (Biotechnology)				
2014-16	NIL	44.44	55.56	NIL
Ph.D. (Biotechnology)				
2011	NA	57.14	42.86	NIL
2012	NA	NIL	100	NIL
2013	NA	100	NIL	NIL
2014	20.00	30.00	50.00	NIL

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

a)	GATE	22
b)	UGC – JRF	01
c)	CSIR - JRF	05
d)	ICAR - NET	01
e)	NET – LS	01
f)	CSIR – LS	01
g)	UGC – NET	01
h)	Civil Services	00
i)	Defence Services	03

35. Student progression

The Department does not have a systematic data on the progression of students after graduating like proceeding for higher studies or joining the companies after placements, etc. However, the details of alumni available indicate following trends:

Student progression	Percentage against enrolled
UG to PG	20-25%
PG to M.Phil.	Not available
PG to Ph.D.	30-35%
Ph.D. to Post-Doctoral	Total Ph.D. Completed: 09 Ph.D. to Post doc: 03 (33.3%) Ph.D. to Faculty: 04 (44.4%)
Employed	
• Campus selection	Provided in the Table below
• Other than campus recruitment	Data not available

Year	2012	2013	2014	2015*
Offer	Multi	Single	Single	Multi
Participating Students	70	36	56	40
No. of Offers	57	31	47	27
Placement %	81	86	84	68
* Placement is in progress for all branches				
Entrepreneurs	0.5%			

36. Diversity of staff

Percentage of faculty who are graduates		
	Ph.D.	PG
of the same university	4.34	00
from other universities within the State	13.04	09
from universities from other States	73.9	87
from universities outside the country	8.6	04

For Ph.D., percentage is calculated out of total Ph.D. degree holders and Percentage of PG is calculated out of total strength of the Department.

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

Ph.D.: 01 (Dr. Chakresh Kumar Jain)

38. Present details of departmental infrastructural facilities with regard to

a) Library: Library Resource Centre

b) Internet facilities for staff and students:

- All the faculty members are provided with computer with internet connections. Each faculty has access to webkiosk and internal webmail.
- Students are also provided with internet connections with Wi-Fi. They are also provided access to the webkiosk with personal login.
- They can access internet from anywhere within the campus as the entire institutional campus area is Wi-Fi enabled.

- iv. Class rooms, lecture theatres and labs are also well equipped with internet facilities for teaching and demonstration.
 - v. Two computer labs are also there to teach subjects related to computer science and bioinformatics which also have upgraded soft wares and internet facility.
- c) **Total number of class room:** 49 Lecture Theatres/ Class Rooms and 42 Tutorial Rooms of the Institute are shared with other departments
- d) **Class rooms with ICT facility:** 40 Lecture Theatres/ Class Rooms.
- e) **Students' laboratories:** 09

Laboratory	Location	L A N	P C	Power backup	Capacity	Display Board	White Board
Microbiology	ABB-I	Y	Y	Y	30	Y	Y
Molecular Biology	ABB-I	Y	Y	Y	30	Y	Y
Biochemistry/ Immunology	ABB-I	Y	Y	Y	30	Y	Y
Animal Cell Culture	ABB-I	Y	Y	Y	06	N	-
Plant Tissue Culture	ABB-I	Y	Y	Y	06	N	-
Biotech Lab- 1	ABB-I	Y	Y	Y	40	Y	Y
Biotech Lab- 2	ABB-I	Y	Y	Y	40	Y	Y
Biotech Lab- 3	ABB-I	Y	Y	Y	30	Y	Y
Central Instrumentation Facility	ABB-I	Y	Y	Y	30	Y	Y

f) **Research Laboratories : 05**

Laboratory	Location	L A N	P C	Power backup	Capacity	Display Board	White Board
Functional Genomics/ Centre for Emerging Diseases	ABB-I	Y	Y	Y	-	Y	Y
Novel Drug Delivery Systems/Nano- Biotechnology	ABB-I	Y	Y	Y	-	Y	Y
Microbial Biotechnology	ABB-I	Y	Y	Y	-	N	-
Transcriptome Laboratory	ABB-I	Y	Y	Y	-	N	Y
Drosophila Laboratory	ABB-I	Y	Y	Y	-	N	-

Details of Facilities available in different laboratories:

Microbial Biotechnology	Gas Chromatography, Monocular Microscope (Olympus), Horizontal Laminar Flow, -80°C Deep Freezer (Newbrunswick), Binocular Microscope (Olympus), Orbital Shaker (Kuhner), Fermenter (Newbrunswick)
Molecular Biology	Gel Documentation System (Biorad), Refrigerated Centrifuges (Sigma, Hermle), Gene Cyclor (Biorad), Dry Bath, U.V Transilluminator, Orbital Incubator Shaker, Refrigerator, -20°C Refrigerator, Binocular Dissecting Microscope (Olympus), Thermal Cyclor (Eppendorf)
Biochemistry and Immunology	Clinical Centrifuge, Binocular Dissecting Microscope (Olympus), ELISA Reader (Biorad), U.V Spectrophotometer (Shimadzu)
Cell Culture	CO ₂ Incubator (Newbrunswick), Horizontal Laminar Flow, Inverted Microscope (Olympus), Fluorescence microscopes, Filtration assembly, Peristaltic Pump (Millipore), Plant Growth Chamber, photoperiod controller
Bioinformatics	Latest P4 Machines with 512 Mb RAM, Intel Processor, color monitors (Hewlett Packard/ Compaq), Sigma plot version 9.0
Functional Genomics	AKTA- FPLC, Nanodrop spectrophotometer, Eppendorf Biophotometer plus, Speedvac concentrator, Electroporator (Biorad), mini spin, DNA gel electrophoresis Unit, Refrigerated Centrifuge, Vertical Laminar Flow (Class 2 B2), -20 Refrigerator, UV cross linker
Nanobiotechnology and Novel Drug Delivery Systems	HPLC, Dissolution Apparatus, Centrifuge, Ultracentrifuge, Ultrasonicator, frequency counter, micro M meter

39. List of doctoral, post-doctoral students and Research Associates

a) From the host institution/university

1. Doctoral students: 02

Aditi Jain	Ongoing
Neha Srivastava	Ongoing

2. Postdoctoral: Nil

3. Research associates: Nil

b) From other institution/university

1. Doctoral students: 37

S. No.	Enrollment Year	Name of the student	Status
1	2003	Smriti Gaur	Awarded
3	2005	N. Kumarswamy	Awarded
2	2006	Sarita Agrahari	Awarded
4	2006	Aditi Shrivastav	Awarded
5	2006	Kapila Kumar	Awarded
6	2008	Gajendra B. Singh	Awarded
7	2008	Shikha Sharma	Awarded
8	2010	Jyoti Rana	Awarded
9	2010	Sreejith Rajasekharan	Awarded
10	2008	Namrata Dudha	Ongoing
11	2009	Nivedita Mishra	Ongoing
12	2009	Hitesh Kumar Jaiswal	Ongoing
13	2009	Jaisri J	Ongoing
14	2009	Mamta Pant	Ongoing
15	2009	Sujata Basu	Ongoing
16	2010	Sonal Gupta	Ongoing
17	2010	Manisha Singh	Ongoing
18	2010	Neha Atale	Ongoing
19	2011	Anuradha	Ongoing
20	2011	Nidhi Bajpai	Ongoing
21	2011	Rashi	Ongoing
22	2011	Ragini Raghav	Ongoing
23	2011	Parul Sharma	Ongoing
24	2012	Sonam Shaheen	Ongoing
25	2012	Deepak Sharma	Ongoing
26	2012	A. Ibeyaima	Ongoing
27	2012	Garima Sharma	Ongoing
28	2013	Yashika Rustagi	Ongoing
29	2013	Nancy Taneja	Ongoing
30	2014	Radhika Khanna	Ongoing
31	2014	Samiya Khan	Ongoing
32	2014	Deepali Verma	Ongoing
33	2014	Nidhi Srivastava	Ongoing

34	2014	Swarna Shika	Ongoing
35	2014	Pragya Bhardwaj	Ongoing
36	2014	Pratibha Yadav	Ongoing
37	2015	Garima Agarwal	Ongoing

2. Post doc: Nil
3. Research Associates: 01 (Dr. Nandini K. E.)

40. Number of post graduate students getting financial assistance from the university (Current Strength).

1. M. Tech: Nil
2. Ph.D.: 07

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Before introducing a new programme or a course, a measured view is taken considering faculty expertise, laboratory infrastructure, new and emerging areas in the field and preference of industry for particular expertise/knowledge in biotechnology. Having observed the demand of students for M. Tech., both from outside Institutions and students of B. Tech. programme at IIIT, increasing trend of students opting for Integrated M. Tech. (Biotechnology) and recommendation of BOS Biotechnology, a two year M. Tech. programme in Biotechnology was launched in the year 2014.

42. Does the department obtain feedback from

i. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. Feedback from faculty is obtained during departmental meetings. Before setting departmental agenda for BOS and Academic Council, aspects of curriculum such as course content and learning expectations are discussed in departmental meetings.

ii. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

At the end of every semester, student's feedback is collected for each subject about the faculty, course contents, and method of teaching and learning/understanding of contents. Feedback is communicated to concerned faculty for appropriate corrective actions.

iii. alumni and employers on the programmes offered and how does the department utilize the feedback?

Yes. Feedback from alumni is collected. Faculty also receives informal feedback from employers from time to time. Feedback is discussed departmentally and utilized appropriately.

Online feedback collection mechanism has been operationalized from Academic Session 2014-15 through Institute Quality Assurance Cell (IQAC).

43. List the distinguished alumni of the department (maximum 10)

- Abhishek Tyagi (Batch: 2003-07), Managing Director, “Edge Consultancies” (a biotechnology entrepreneurial initiative), Ghaziabad.
- Atul Kumar & Gaurav Kumar (Batch: 2007-12), Founders, “GRALIT India Biotech Pvt. Ltd” (a biotechnology entrepreneurial initiative), Ghaziabad.
- Deepak Prajapat (Batch: 2007-11), Cofounder & Team Leader, “Mind Bird Solutions” (a web application development venture), Bangalore.
- Govind Kedia (Batch: 2003-07), Founder & Managing Director, “Arctic Innovation Consulting Solutions Pvt. Ltd.” (IPR entrepreneurial venture), Noida.

44. Give details of student enrichment programmes (special lectures/ workshops/ seminar) involving external experts.

Department of Biotechnology has organised Workshops and invited lectures by experts from reputed National, International organizations and Industry including: DRDO, DBT, NRDC, IGIB, DU, JNU, Jamia Hamdard, Geneva University, University of New Castle, University of Otago, Christchurch, New Zealand, Reliance Life Sciences, Monsanto, Xcelris Genomics, etc. The workshops and expert lectures provide an intellectual platform for students to interact with the speakers of eminence and get abreast with the emerging technologies.

1. Workshop “Patent Search” 8 Jan, 2015 External Expert: Mr. Bijay Kumar Sahu, NRDC, GOI
2. Workshop “Emerging Trends in Biomathematics” 29 Nov, 2014 External Experts: Prof. Peeyush Chandra, Dept. of Mathematics and Statistics, IIT, Kanpur, Prof. Sitabhra Sinha, Institute of Mathematical Sciences (IMSc), Chennai, Prof. Subhadip Raychaudhary, IIIT-Delhi, Prof. Karmeshu, School of Computer and Systems Sciences, JNU
3. International conference “IC LIFE” 29 - 30 Aug, 2014 External Experts: Mr. Bijay Kumar Sahu, NRDC, GOI, Dr. A Fernanadis Asso. Director, Merck Singapore, Dr. Julian Cadia University of Maryland, Baltimore, Dr. Pradeep Srivastava, Scientist

and Deputy Director, CDRI, Prof. J Bellare , IIT Bombay, Dr. V Menon and S P Singh , BHU, Dr. S Panda , IIT Kanpur, Dr. Manish , Delhi University, Prof. Y K Gupta , AIIMS, Delhi, Dr. P Katiyar IIT Roorkee, Dr. B. K. Murthy Executive director, CDAC, Noida, Dr. Om Parkash National JALMA Institute for Leprosy and Other Mycobacterial Diseases, Agra, Dr. Gaurav Pathak Glenmark Pharmaceutical Ltd., Nashik
4. Workshop “IPR Awareness” 23 Aug, 2014 External Experts: Mr. Chandrashekhar Tanikella , Director & Head, Patent Facilitating Centre, TIFAC, DST, GOI, Mr. Bijay Kumar Sahu , Deputy Manager, IPR, NRDC, GOI, Mr. Abhishek Sen , Senior Patent Attorney & Head-Patent Operations, S. Majumdar & Co., Delhi.
5. Expert lecture "Future Eyes on Biotechnology" 12 Mar, 2014 External Expert: Dr. Uma Shanker , Consultant Scientist, Biotek Park Lucknow.
6. Expert lecture “Techno-commercial issues related to Industrial Bioprocessing” 10 Feb, 2014 External Expert: Prof. Subhash Chand , IIT- Delhi.
7. Expert Interaction “Innovative approaches for biomedical research- students of today are research leaders of tomorrow” 29 – 30 Oct, 2013 External Experts: Prof. Madhav Bhatia , University of Otago, Christchurch, New Zealand, Prof. S. P. Singh , BHU.
8. Expert lecture “Role of Biomarkers in P4 medicine” 11 Oct, 2013 External Experts: Dr. Anup Madan , Genomics/Associate Director, Sequencing Group at Covance, Seattle, USA.
9. International Conference “Bioproducts and the OMICS Revolution” 16 – 17, Mar, 2013 External Experts: Prof. Michael Goodfellow , Newcastle University, U.K., Prof. Rup Lal , Delhi University Prof. A.K. Srivastava , Department of Biochemical Engineering & Biotechnology, IIT, Delhi Dr. Amit Saxena Head, Molecular Medicine Department, Reliance Life sciences, Mumbai, Dr. Gulshan Wadhwa , Joint Director, DBT, GOI, Dr. Sanjay Shahi - Xcelris Genomics, Ahmedabad, Dr. Jyoti Bajpai Dikshit , Strand Life Sciences, Bangalore.
10. Expert lecture “Therapeutic implications of targeting innate immune response against cancer and viral infection” 21 Jan, 2013 External Experts: Dr. Babal Kant Jha , Cleveland Clinic, Cleveland, USA.
11. Expert lecture “Prospects of Nanomaterials Based Biosensors for Cancer Detection” 9 Nov, 2012 External Experts: Dr. B D Malhotra , Scientist, Department of Biotechnology and Electronics and Communication, DTU, New Delhi.
12. Virtual Workshop “Scientific Writing & Publishing, 28 Sep, 2012 External Experts: Prof. Rup Lal , Department of Zoology, Delhi

University, Dr. Sunil Lal , ICGEB, New Delhi.
13. Workshop “Flow Cytometry and Cytometric Applications” 6 Aug, 2012 External Expert: Dr. Amitav Mohanthy , Application Scientist, BD Biosciences, Delhi.
14. Expert lecture “Metagenomic analysis and its prospects for environmental remediation” 7 May, 2012 External Expert: Prof. Rup Lal , Delhi University.
15. Expert lecture “Environmental Laws” 3 May 2012 External Experts: Dr. Shyamala Mani , Program Director, Waste and Resource Management, Centre for Environment Education, New Delhi.
16. Expert lecture “Journey from protein purification to cloning to identifying function - Case history of HABP1” 26 Mar, 2012 External Expert: Prof. Kasturi Datta , JNU, New Delhi.
17. Workshop “IP Awareness and Innovation” 21 Feb, 2012 External Experts: Mr. R Saha , Advisor, Global Institute of Intellectual Property (GIIP), New Delhi. Dr. Deepa Kachroo Tikur , Director Programmes, GIIP, New Delhi.
18. Expert lecture “The genetic structure and evolution of mating isolation between worldwide <i>Drosophila ananassae</i> populations” 11 Mar, 2011 External Experts: Prof. Malcolm Schug , Univ. of North Carolina, Greensboro, USA.
19. International Conference “Bioproducts from Natural Sources” 3 Feb, 2011 External Experts: Prof Michael Goodfellow , Newcastle University, UK, Prof Subhash Chand , Department of Biochemical Engineering & Biotechnology, IIT, Delhi. Dr. Javed Ali , Department of Pharmaceutics, Jamia Hamdard University, Dr. V.K Tripathi , CEO - Oscar Ozone Group, Gurgaon.
20. Expert lectures, 18 Nov, 2010 External Expert: Dr. Anavaj Sakuntabhai , Pasteur Institute, Paris, France, Dr. Estella Poloni , Geneva University, Switzerland.
21. Expert lecture “Novel Technologies in Molecular Biology/ Biotechnology” 16 Sep, 2010 External Experts: Dr. Bhaskar Rao , Vice-President, Eppendorf India Ltd., Bangalore.
22. Workshop “Plant Bioproducts & Industrial Scale-up” 5 – 9 Jul, 2010 External experts: Dr. Anjanii Kumar , Thar Biotech Ltd., Gurgaon, Dr. V.K. Tripathi , Vice-President (R&D), Sanat Products Ltd., U.P. Lalit Mehta , RITES, Gurgaon, Dr. Suresh , PSO, TIFAC, DBT, GOI, Dr. Arjun Ram , Scientist E-2, IGIB, New Delhi, Dr. SanjeevKalia , Regulatory Manager, Monsanto India Ltd., Dr. GulshanWadhwa , Principal Scientific Officer, DBT, GOI, Dr. Yogi Raj , Consultant, Nesting Ideas, Bangalore.

45. List the teaching methods adopted by the faculty for different programmes.

- Regular Chalk/Marker and Board
- Use of audio visual aids
- Educational videos
- Group discussions/group exercises
- Live projects in areas of Biotechnology
- Direct web access in lecture theatres
- Peer learning and student presentations
- Project based learning
- Case study / peer-reviewed publication based learning
- Lab based hands-on training
- Industrial training
- Tutorials and Assignments
- Poster presentation

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The Biotechnology curriculum lays focus, apart from subject area knowledge, on soft skills desired by Academia, Industry and R&D. The same is reflected in student's professional advancement (higher education/ employability/ entrepreneurship). Department assesses students through session tests (T1, T2, and End Semester Examination), Tutorials, assignments, presentations, and research oriented projects.

Apart from regular faculty meetings, the course curriculum, and course contents are periodically reviewed in Board of Studies (BOS-Biotechnology). A formal monitoring system for quality management has been started through IQAC from Academic Session 2014-15.

47. Highlight the participation of students and faculty in extension activities.

Faculty and students of the department are actively involved in various extension activities organized by JIIT. Details are given in section 3.6 of Self Study Report of the Institute.

48. Give details of “beyond syllabus scholarly activities” of the department.

Department's beyond syllabus scholarly activities (**Annexure-IV/BT**) include

- Guest Lectures
- Seminars and Workshops

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Yes, the B.Tech. in Biotechnology programme was NBA accredited for 5 years (date of accreditation: 22.01.2008)

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Department has been strengthening research activities through research grants from Govt organisations and funds and facilities from IIIT. Ph.D. scholars, JRF/SRF/RA's, students doing projects under the guidance of supervisors are involved in generation of new knowledge and contribution through publications as below:

No.	Name of the Event	2010	2011	2012	2013	2014	2015	Total
1	Research Papers							
	a. International	11	35	38	60	43	30	217
	b. National	2	1	1	1	-	-	5
2	Patents filed	1						1
3	GenBank submissions	4	11	5				20

Some of the major contributions of the Department in research and development (categorized under two thrust areas) are as follows:

Disease Biology: - 'Centre for Emerging Diseases' address questions of molecular pathogenesis of emerging viral and bacterial pathogens (host pathogen interactions, essential metabolic pathways of pathogens), life style diseases such as diabetes, cardiovascular diseases and the design of novel diagnostics and therapeutics.

1. Research is being carried out on emerging/re-emerging pathogens specifically Chikungunya (CHIKV) and Chandipura (CHPV) viruses. All the nine genes from an Indian isolate of Chikungunya Virus (CHIKV- IND-06-Guj) have been cloned, sequenced and analysed phylogenetically. The interactions among the four non-structural proteins have been mapped to the domain level speculating a computational model of the viral late replicase complex (sponsored by DBT). The host protein interactors of CHIKV (E1, E2 and nsP2 proteins) have been indentified by screening the human cDNA library using yeast two-hybrid system. Further the host interactors of all the nine viral proteins have also been predicted using a protein structure similarity based computational approach.

2. The intraviral interactions of encephalitis causing Chandipura Virus (CHPV) proteins have been studied (sponsored by DST). The cellular factors that associate with CHPV during viral pathogenesis have been predicted and the possible modes of neuroinvasion by the virus have been hypothesised. Further, the host protein interactors of the viral membrane proteins (Matrix and Glycoproteins) have been experimentally identified and peptide inhibitors are currently being validated.
3. In view of the rapid pace with which multidrug resistant strains of majority of pathogens are emerging, the need for new antibacterial compounds cannot be overemphasized. Research efforts have been initiated for early-stage rational drug discovery for a novel antimicrobial agent(s). Cloning and purification of novel drug targets from five human pathogens (responsible for infecting respiratory and/or gastrointestinal tract) have been achieved for determining their three dimensional structures.
4. Phylogenomics and Population Genomics study of Indian *Drosophila* species is being carried out (sponsored by DST) for inferring genetic inter-relationship among closely related species and to understand speciation events and adaptation with respect to different ecoclimatic zone in Indian *Drosophila*. Other research interests using this model system focus on aging and development, toxicology, ecological and behaviour genetics etc.
5. Innovations in novel drug delivery systems have resulted in improvement of the pharmacological and therapeutic properties of drugs. Polymeric Nanoparticles (chitosan, PLGA) containing encapsulated, dispersed, absorbed drugs have been synthesized to improve the delivery and bioavailability of some anti epileptic drugs, anti alzheimer's drugs and for some other CNS related disorders. Nanoemulsions encapsulating some natural antimicrobial compounds (catechins and flavanoids) are being investigated for enhanced efficacy and bioavailability.
6. Nanoparticles of metals and enzymes have been synthesized and exploited for development of biosensors with improved stability, sensitivity and response time. A nanoparticle based glucose biosensor has been developed under an AICTE funded research project. Currently thyroid biosensor and immunosensor for cancer diagnosis as point of care device development are being investigated.
7. Novel process to enhance thermal and pH stability of enzymes has been developed through nanoformulation. An Indian patent entitled "Novel process to enhance thermal stability of enzyme

nanoparticles” has been filed (Patent Application No 2782/DEL/2010).

8. The bioinformatic group of the department is carrying out research in the area of clinical data management, computational genomics, machine learning, *in-silico* target-ligand interactions and role of networks in pathogenic organisms and chronic diseases as evident by several publications journals, development of pipelines, databases and tools. A new multi-level system has been created to study a clinically relevant condition. A new semi-automated text mining system has been built to mine millions of bibliographic records. A functional model has been generated for drug activity (based upon multiple targeting interactions of the given drug towards a subset of nodes in the network). Metrics for leveraging more in Clinical Data Management in the context of vaccine trials has been generated.
9. Research is being carried out to study the cardioprotective potential of natural products where Curcumin, a polyphenol isolated from plant *Curcuma longa*, is found to suppress the gelatinase and GATA4 activities in norepinephrine induced stress in H9C2 cardiomyocyte. Another plant *S.cumini* is found to suppress glucose mediated cardiac cell death *in vitro* by inhibiting mitochondrial induced ROS production and apoptotic genes.
10. microRNAs profiling of libraries has been prepared from various stages of chick heart development using deep sequencing approach. A database of known and novel cardiomiRs and their targets has been prepared for wider use among researchers.
11. Any perturbation in mitochondrial metabolism may affect several organs and hence cause several diseases/disorders. In the last few decades the study about mitochondrial defects and its association with several neurological and metabolic disorders have gained lots of interest. Based on it, research is also being conducted to explore the mechanism of pathogenic role of mitochondria in common metabolic/lifestyle diseases like cancer and diabetes. Research is also being conducted to explore the possible mechanism behind the association between vitamin D deficiency and pathogenesis of type 2 diabetes.
12. Kidney stone formation is a complex process involving multiple factors. It has been assumed that inhibitors of urolithiasis have protective effect while stimulator helps in stone formation. Kidney stones invariably comprise a combination of inorganic crystals and organic macromolecules consisting principally of proteins, lipids and GAGs. There are many biomolecules that occur in stones, but their role in urolithiasis remains unknown. Interaction between cell

and crystal and their consequences is being investigated. Study of biomolecules present in kidney stone will help us in solving the mystery of stone formation.

Plant and Microbial Biotechnology research activities focus towards food technology, bioresources, healthcare, agriculture biotechnology and environmental remediation

13. Natural products of industrial importance from microbial and plant sources are being investigated. On-going work has resulted in screening, characterization and taxonomic identification of novel microorganisms from niche habitats (semi-arid, petrol-contaminated, arid desert soil and endophytic) for production of antimicrobial compounds, biosurfactants and enzymes.
14. Natural products and Ayurveda herbal remedies play a very important role in the new drug discovery and development. Role of herbal products for overcoming the toxic effect of tobacco smoke and environmental pollutants on cell lines and yeast model system has been investigated. The findings suggest that the plant extracts of *Salacia oblonga* and *Adhatoda vasica* as well as pure Mangiferin and Vasicine are able to overcome toxic effects of tobacco smoke and environmental pollutants.
15. Biorefining or biological upgradation is an interesting approach to remove nitrogen and aromatic content from fuels. Microorganisms have been isolated that are capable of expressing genes involved in the degradation of these contaminants present in fossil fuels.
16. Plant growth promoting microbes (PGPMs) can be used as an alternative to chemical fertilizers as well as to improve fertility (health) of degraded and marginal soils, to degrade xenobiotic compounds present in agriculture soils thus providing safe and pollutant free agriculture produce. A consortium of PGPM has been developed that can be used as bioinoculants (biofertilisers, biopesticides) to improve agriculture productivity.
17. Bioprocess parameters have been optimized for *in-vitro* propagation (using liquid cultures) of different medicinal plant viz. *Bacopa* sp., *Mentha* sp., and evaluated for their anti-oxidant property.
18. Microbial sources have been used as potential sources of biopolymers viz. cellulose and chitosan for development of cell culture surface and enzyme immobilization matrices. Microbial strains have been screened for been an alternative source of flavors via biotransformation.
19. Enzyme Keratinase produced by the isolated soil microbe and isolated in-house has found applicability in imparting anti-shrink

functionality to wool and works synergistically with other scale removing enzymes. This enzyme has been used by other researchers (Chakraborty et al., 2014; Ind. J. Fibre & Textile Res.).

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

1. Faculty with doctoral and postdoctoral research experience in diverse domains of biotechnology from reputed National/International Institutions
2. Research Grants from National Funding agencies
3. Research Infrastructure with high end Instruments
4. Early stage research exposure/orientation through in-house conduct of student's research projects and participation in conferences / publications.
5. Strategic NCR location enabling collaborations with Institutions.

Weaknesses:

1. Employment opportunities for students
2. Conversion of research output into Patents
3. International collaboration

Opportunities:

1. National focus on Biotechnology
2. International collaboration
3. Inter-departmental research
4. Availability of Biotechnology academic institutions / industries / Govt. agencies in vicinity
5. Drug discovery and bio-products

Challenges:

1. Addressing the gap between academia and industry's R & D practices
2. Keeping pace with changing technologies in the field of biotechnology
3. Student placement

52. Future plans of the department.

1. Enhance departmental R&D efforts in the ongoing areas of research:
 - Application of Nanotechnology in Biosensors and novel drug delivery approaches
 - Disease Biology and Drug Discovery through experimental and bioinformatics approaches,
 - Natural products of therapeutic potential,
 - Novel strategies in bioremediation,
 - Alternative sources and bioprocess strategies for production of bio-molecules.
2. Foster inter-departmental interaction/collaboration at IIIT and across other academic and industrial institutions for interdisciplinary research.
3. Enhance extra-mural grants support share, raise visibility by higher impact publications and capitalize new knowledge through IPR.

Publications from the national collaboration at individual level

Vibha Rani

1. Jain, A., Atale, N., Kohli, S., **Bhattacharya, S.**, Sharma, M. and **Rani, V.** “An assessment of norepinephrine mediated hypertrophy to apoptosis transition in cardiac cells: A signal for cell death”. Chem Biol Interact. Vol. 225, pp. 54-62, 2015. [Indexed in Scopus, Impact factor: 2.982]
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Ashwini Mathur

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Chakresh Jain and Sanjeev K. Sharma

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Shalini Mani

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Publications from the international collaboration at individual level

Sanjeev K. Sharma, Sanjay Gupta and Indira P. Sarethy

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Sujata Mohanty

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2. Gupta V.K., Tuohy M., Sharma G.D., and **Gaur S.** “Applications of Microbial Genes in Enzyme Technology”. Nova Science Publishers, USA, 2013. ISBN No. 978-3-8433-5800-2
3. **Rachana**, Basu S. “Biochemistry” Punjab Technical University: Vikas publications, Noida, 2010, ISBN 978-81-259-4547-5
4. **Rachana**, Sharma, S, Basu, S, “Human Anatomy and Physiology” Punjab Technical University: Vikas publications, Noida, 2010, ISBN 978-81-259-4896

Annexure-III/BT

Google Scholar Citation

S No.	Faculty Name	Publication Details	No. of Citations
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S. No.	Faculty Name	Publication Details	No. of Citations
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2.	Sarethy, I.P., Sharma, S.K. and Gupta, S.	Sarethy, I.P., Saxena, Y., Kapoor, A., Sharma, S., Sharma, S.K., Gupta, V. and Gupta, S. "Alkaliphilic bacteria: applications in industrial biotechnology". J Industrial Microbiol Biotechnol. Vol. 38(7), pp. 769-790, 2011.	32
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Annexure-IV/BT

Conference/ Workshops/ FDPs organized at IIIT

S.No.	Conference/ Workshops/FDPs organized at IIIT	Organized by	Faculty Participated
1.	Workshop on “Patent Search” January 8, 2015	IIIT, Noida	All Faculty/ Biotech
2.	Workshop on “Emerging Trends in Biomathematics” November 29, 2014	IIIT and DST, GOI	All Faculty/ Biotech
3.	Faculty Development Program on “Applications of Bio informatics in Disease and Drug Discovery”, July 28-August 2, 2014	IIIT, Noida	All Faculty/ Biotech
4.	Workshop on “IPR Awareness” August 23, 2014	IIIT, Noida	All Faculty/ Biotech
5.	Expert Interaction- “Innovative Approaches for Biomedical Research: Students of Today are Research Leaders of Tomorrow”, October 29-30, 2013	IIIT, Noida	All Faculty/ Biotech
6.	“Bioproducts and the OMICS Revolution”, Scientity Inc., March 16-17, 2013.	IIIT, Noida and Scientity Inc. U.K	All Faculty/ Biotech
7.	Virtual Workshop on “Scientific Writing and Publishing”, September 28, 2012	IIIT, Noida and American Society of Microbiology (Indian Chapter)	All Faculty/ Biotech
8.	Workshop on “Flow Cytometry and Cytometric Applications”, August 6, 2012	IIIT, Noida and BD Biosciences	All Faculty/ Biotech
9.	Workshop on “IP Awareness and Innovation”, February 21, 2012	IIIT, Noida and GIIP, New Delhi	All Faculty/ Biotech

10.	International Conference on “Bioproducts from Natural Sources”, February 3, 2011	JIIT, Noida and Scientity Inc., U.K.	All Faculty/ Biotech
11.	Workshop on “Plant Bioproducts and Industrial Scale-up”, July 5-9, 2010	JIIT, Noida	All Faculty/ Biotech

Expert talks organized at JIIT

S. No.	Expert	Topic	Date
1.	Dr. Uma Shanker, Consultant Scientist, Biotech Park Lucknow	Future eyes on biotechnology	12/03/2014
2.	Prof. Subhash Chand, IIT-Delhi	Techno-commercial issues related to industrial bioprocessing	10/2/2014
3.	Prof. Madhav Bhatia, University of Otago, Christchurch, New Zealand. Prof. S. P. Singh, Banaras Hindu University (BHU), India.	Innovative approaches for biomedical research- students of today are research leaders of tomorrow	29/10/2013-30/10/2013
4.	Dr. Anup Madan, Genomics/Associate Director, Sequencing Group, Covance, Seattle, USA.	Role of biomarkers in P4 medicine	11/10/2013
5.	Dr. Babal Kant Jha, Cleveland Clinic, Cleveland, USA.	Therapeutic implications of targeting innate immune response against cancer and viral infection	21/01/2013
6.	Dr. B D Malhotra, Department of Biotechnology and Electronics and Communication, DTU, New Delhi	Prospects of nanomaterials based biosensors for cancer detection	09/11/2012
7.	Prof. Rup Lal, Delhi University, New Delhi	Metagenomic analysis and its prospects for environmental remediation	07/05/2012
8.	Dr. Shyamala Mani, Program Director, Waste and Resource Management, Centre for Environment Education New Delhi	Environmental Laws	03/05/2012

9.	Prof. Kasturi Datta, JNU, New Delhi	Journey from protein purification to cloning to identifying function - Case history of HABP1	26/03/2012
10.	Prof. Malcolm Schug, University of North Carolina, Greensboro, USA.	The genetic structure and evolution of mating isolation between worldwide <i>Drosophila ananassae</i> populations	11/03/2011
11.	Dr. Anavaj Sakuntabhai, Pasteur Institute, Paris, France and Dr. Estella Poloni, Geneva University, Switzerland.	Interaction and lecture	18/11/2010
12.	Dr. Bhaskar Rao, Vice-President, Eppendorf India Ltd., India.	Novel technologies in molecular biology/biotechnology	16/09/2010

Support provided to faculty to attend Conference/Workshops/FDPs outside

S. No.	FDP, Workshop, Training Programs/ Conferences	Organized by	Faculty Participated
1.	International symposium on “Genomics in Health and Disease” & 40 th Annual conference of Indian Society of Human Genetics” from 28 th -30 th January 2015	Nehru Centre, Mumbai	Sujata Mohanty
2.	“Expression and solubilization studies of Carbazole dioxygenase in E.coli”, First international conference on Biotechnology, Feb 12-14, 2015	South Asian University, New Delhi	Sanjay Gupta, Nidhi Gupta
3.	Ist international conference on Translational Research: from Basic science to Clinic Application, February 5-7, 2015	KIIT University, Bhubneshwar, Odisha, India	Vibha Rani
4.	Workshop on “Applications of Bioinformatics tools and databases in Biomedical Research”, March 28-29, 2015	Desert Medicine Research Center, ICMR, Jodhpur, Raj	Chakresh K Jain
5.	12th Annual Conference of International Society for Heart Research, March 14-15, 2015	JNU, New Delhi, India	Vibha Rani

6.	National conference on solid state chemistry and allied areas (ISCAS-2015), May 8-10, 2015	Bhaskaracharya College of Applied Sciences, Univ. of Delhi,	Sudha Srivastava
7.	QS - in - conversation, Feb 2-4, 2015	QS in association with Indian Centre for Assessment and Accreditation, Noida	Sanjeev K. Sharma
8.	6th International Conference on Advancements in Polymeric Materials, February 20-22, 2015	IISc, Bangalore, India	Ashwani Mathur, Garima Mathur, Sanjeev K. Sharma
9.	3rd International Conference On “Applied Sciences, Environmental Engineering and Clean Energy Technologies for Sustainable Development” (ASECET-2015), April 25-26 2015	JNU, New Delhi, India	Smriti Gaur
10.	Faculty Development Program, “Statistical tools in research methodology”, December 12-13, 2014	MAIMS, New Delhi	Priyadarshini
11.	Faculty Development Program, “Effective Teaching”, July 28-August 2, 2014	HSS, IIIT, Noida	Vibha Gupta
12.	Faculty Development Program, “Advanced Computing Methods”, July 21-26, 2014	CSE and IT, IIIT, Noida	Rachana, Chakresh K Jain
13.	World Congress on “Agriculture, Forestry, Horticulture, Aquaculture, Animal Sciences, Food Technology, Biodiversity and Climate Change: Sustainable Approaches”, December 6-7, 2014	JNU, New Delhi, India	Sujata Mohanty
14.	“Fundamentals of Animal Cell Culture and Functional Applications”, June 19-21, 2014	Institute of Bioinformatics, Bangalore	Krishna Sundari

15.	Indo US Workshop, “Nanoengineering in Medicine”, December 17-19, 2014	AIIMS, New Delhi	Shweta Dang
16.	Hands on Training Programme, “Next Generation sequencing (NGS)-Bioinformatics and Data Analysis (2014)”, July 15-19, 2014	AU-KBC Research Centre, MIT, Anna University, Chennai	Indira P. Sarethy
17.	International conference on Electron Microscopy and XXXV annual meeting of Electron microscope Society of India (EMSI), 7th to 11th July, 2014	Electron Microscope Society of India, New Delhi	Ashwani Mathur, Garima Mathur
18.	“Realization of Bioethics in Medical and Biological Research”, February 14, 2014.	Department of Zoology, Dev Samaj Post Graduate College for Women, Firozpur, Punjab	Ashwani Mathur
19.	“Recent Trends in Environmental Science”, February 4-5, 2014	Indira Gandhi Academy of Environmental Education Research and Ecoplanning, Jiwaji University, Gwalior	Chakresh K Jain
20.	“Nanoscience and Nanotechnology”, Aligarh Nano- IV International, March 8-10, 2014	Dept. of Applied Physics, AMU, Aligarh	Sudha Srivastava
21.	Guest lecture at “Future Prospects of Advancements in Biological Sciences, Health Issues and Environmental Protection”, February 7-8, 2014	CytoGene Research & Development, Lucknow and Society of Biosciences, Health issue and Environmental protection, Lucknow	Rachana
22.	Faculty Development Program, “Recent Trends in Physics and Materials Science”, July 21-26, 2014	PMSE, IIIT, Noida	Sudha Srivastava, Krishna Sundari
23.	Faculty Development Program, “Advance Data Analysis Through	ITS Institute, Ghaziabad, and	Neeraj Wadhwa

	Data Analysis Software”, June 14-26, 2010	AICTE	
24.	AICTE–QIP Short Term Training Program, “Biomaterials and Tissue Engineering”, February 6-10, 2012	IIT, Madras	Ashwani Mathur
25.	AICTE sponsored QIP course “Advances in Waste Water Treatment”, October 10-15, 2011	IIT Delhi	Garima Mathur
26.	System Genetics, September 19-25, 2010	Bar Harbor, Maine, USA	Sujata Mohanty
27.	“Identification and Characterization Techniques of Protein Biomolecule”, Refresher course in Life sciences, UGC-Academic Staff College, Ranchi University, Ranchi, 2013	Ranchi University, Ranchi	Priyadarshini
28.	DBT Mentorship Workshop for Women Scientist, July 11, 2013	Indian National Science Academy (INSA), New Delhi	Shalini Mani
29.	“Essential oil, Perfumery and Aromatherapy”, March 8-10, 2013	Fragrance & Flavour Development Centre (FFDC), Kannauj, Delhi	Ashwani Mathur
30.	“Mycorrhiza-future Vision”, February 13, 2013	TERI, New Delhi	Krishna Sundari
31.	“Computer Aided Drug Design”, 2013	Department of Biotechnology, Madhav Institute of Technology & Science, Gwalior	Chakresh K Jain
32.	“Constructing a Comprehensive Map for Molecules Implicated in Obesity and its Induced Disorders”, 2013	BioIT world, Boston, USA	Kamal Rawal
33.	“Microbial Biomolecules: Carriers for Cell culture”, 2013	Universitat Autònoma de Barcelona, Spain	Ashwani Mathur
34.	Health, Environment and Industrial Biotechnology, "Biosangam 2013" November 21-23, 2013	Department of Biotechnology, Motilal Nehru National Institute of Technology,	Shalini Mani, Rachana

		Allahabad	
35.	Lactic acid bacteria: “Lactic Acid Bacteria as Growth Engine for Economy and Integrated Industries”, September 6-8, 2013.	India Habitat Centre, New Delhi	Reema Gabrani
36.	Science and Engineering in Biology, Medical and Public Health, BioMedPub 2013, August 16-18, 2013	Jakarta, Indonesia	Chakresh K Jain
37.	Annual Convention of Indian Association for Cancer Research & International Symposium: Infection and Cancer, February 13-16, 2013	Dr. B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi, Delhi	Reema Gabrani
38.	Mycorrhiza (ICOM7), 2013, January 6-11, 2013	TERI, New Delhi	Krishna Sundari
39.	“Wetlands and Biodiversity Conservation and Role of Education for sustainable development (ESD)”, June 4-5, 2013	Vishwa Yuvak Kendra, Chanakyapuri, New Delhi	Chakresh K Jain
40.	“Physics and Technology of Sensors”, March 11-12, 2013	Jamia Milia Islamia New Delhi	Sudha Srivastava
41.	“Recent Trends in Innovative Research at Undergraduation: Science and Society”, Feb 28 - March 2, 2013	Sri Venkateswara College, University of Delhi	Sanjeev K. Sharma, Chakresh K Jain, Ashwani Mathur
42.	Centenary session of the Indian Science Congress, January 3-7, 2013	Calcutta University, Kolkata	Susinjan Bhattacharya
43.	Advance in Chemical engineering under “TEQIP-II”. 2013	MITS, Gwalior	Chakresh K Jain
44.	“MicroRNA Identification and Target Prediction Tools”, March 2013	Delhi College of Technology and Management	Vibha Rani
45.	Environmental, Industrial and Applied Microbiology (BioMicroWorld 2013) October 2-4, 2013	Formatex Research Centre, Spain	Garima Mathur, Ashwani Mathur, Manisha Singh
46.	“Trash into Cash- Waste	IYCN, New Delhi	Krishna

	Management Workshop”, December 31, 2012		Sundari
47.	Training Workshop for Forensic Science/Medicine Students, 6 September, 2012	National Institute of Criminology and Forensic Sciences, GOI, New Delhi	Kamal Rawal
48.	Springer’s Authors Workshop, August 27, 2012	JNU, New Delhi and Springer	Sujata Mohanty, Rachana
49.	Authored Workshop “How to Write for and Get Published in Scientific Journals and Publish Manuscripts”, August 23, 2012	Delhi University and Springer	Garima Mathur, Ashwani Mathur, Sanjeev K. Sharma, Smriti Gaur, Pammi Gaubha, Shweta Dang
50.	Workshop on “Effective Grant Writing Skills and Strategic Management of IPR”, July 4-5, 2012	BIRAC-DBT, GOI, New Delhi	Garima Mathur, Ashwani Mathur, Sanjeev K. Sharma
51.	Workshop on “iAdapt- for a CLEAN-India' Campaign”, April 20, 2012	IYCN and Developmental Alternatives, New Delhi	Krishna Sundari
52.	Workshop on “Effectively Using the Pharmacopeia” February 2, 2012	Indian Pharmacopoeia Commission and United States Pharmacopeia, New Delhi	Shalini Mani, Rachana
53.	Industrial Biotechnology and IX Convention of The Biotech Research Society India, November 21-23, 2012	The Biotech Research Society, India and Department of Biotechnology, Punjabi University, Patiala	Ashwani Mathur Garima Mathur
54.	Workshop on “Sequence analysis in Bioinformatics”, 2012	Birla Institute of Science and	Kamal Rawal

		Research, Jaipur	
55.	Workshop on “Structure based Drug designing”, 2012	Birla Institute of Science and Research, Jaipur	Kamal Rawal
56.	National Science Day Seminar, 2012	Department of Science, Dev Samaj College for Women, Ferozpur, Punjab	Ashwani Mathur
57.	Current and Future Scenarios in Drug Development and Delivery, August 11-12, 2012	JCDM College of Pharmacy, Sirsa	Shweta Dang, Reema Gabrani
58.	National Science Seminar, December 15, 2012	Department of Science, Dev Samaj College for Women, Ferozpur, Punjab	Ashwani Mathur
59.	“Bioinformatics and its Application “ Sponsored by Uttarakhand State Biotechnology Department, Government of Uttarakhand, July 16-28, 2012	Department of Computer Science and Engineering, B.T. Kumaon Institute of Technology, Uttarakhand	Chakresh K Jain
60.	New Horizons in Basic and Clinical Research, April 16, 2012	Society of Young Scientist, AIIMS, New Delhi	Shalini Mani, Rachana
61.	Microbes in Health and Agriculture, under UGC Resource Networking, March 12-13, 2012	JNU, New Delhi,	Indira P. Sarethy
62.	“Application of Plackett-Burman Design to Evaluate and Select Media Components”, 2012	TERI, New Delhi	Krishna Sundari
63.	Genes, Genetics & Genomics: Today & Tomorrow- Human Concerns and XXXVII: Annual Conference of The Indian Society of Human Genetics. March 3-5, 2012	The Indian Society of Human Genetics, Punjab University, Chandigarh	Shalini Mani
64.	Panel Discussion: -“Research Dialogue in the Life Sciences” February 20, 2012	Deutsche Forschungsgemeinschaft (DFG, Germany), New Delhi	Sanjeev K. Sharma
65.	“DNA Microarrays: Genome Biology on Chips”, December 11,	University of Delhi South Campus, New	Sanjay Gupta

	2012	Delhi	
66.	Current & Future Scenarios in Drug Development and Delivery, August 12, 2012	JCDM College of Pharmacy, Sirsa	Reema Gabrani, Shweta Dang
67.	Nanoscience and Nanotechnology (Aligarh Nano-II), March 10-12, 2012	AMU, Aligarh	Sudha Srivastava
68.	“IPR Related Tools and Bioethics in Biotechnology”, 2012	NIMR, New Delhi	Shweta Dang
69.	Workshop on “Bioinformatics Tools and Computational Biology”, December 17, 2011	Manav Rachna International University, Faridabad	Chakresh K Jain
70.	Workshop on “Solar Water Heating and other Renewable Energy Technologies for Healthcare Sector and Educational Campuses”, September 9, 2011.	IT power group, UNDP, India and HNRE, GOI Noida	Krishna Sundari
71.	Workshop on “Computational Methods in Molecular Biology”, 15-16, Jan, 2011	Birla Institute of Science and Research , Jaipur	Kamal Rawal
72.	Workshop on “Systems Biology of Obesity”, December 10, 2011	Birla Institute of Science and Research , Jaipur	Kamal Rawal
73.	3 rd Bioinformatics Seminar cum hands on training, November 28-29, 2011	Hamdard University, New Delhi	Chakresh K Jain
74.	“Recent Trends in Materials Science (RTMS-2011)”, October 8-10, 2011.	JUIT, Wagnaghat, Himachal Pradesh	Sudha Srivastava
75.	“New horizons in drug discovery and development”, September 17-18, 2011	Jamia Hamdard, New Delhi	Reema Gabrani, Shweta Dang
76.	“SPS@25: Looking Forward”, March 10-11, 2011	JNU, New Delhi	Sudha Srivastava
77.	Recent Advances in Chemical Sciences Sponsored by DST, Govt of India, New Delhi & DST, Govt. of Raj, Jaipur, January 7-8, 2011	University of Kota, Rajasthan	Vibha Rani
78.	“New Horizons in Biotechnology” and 8th Annual Convention of The Biotech Research Society	The Biotech Research Society, India, and NIIST,	Garima Mathur Ashwani

	India, November 21-24, 2011	CSIR, Trivandrum	Mathur
79.	“Nanomaterials and Nanotechnology” ICNANO-2011, November 18-21, 2011	<i>University of Delhi</i> , International Association of Advanced Materials and Advanced Materials Letters, and VBRI Press, New Delhi	Sudha Srivastava
80.	International Interdisciplinary Science Conference 2011 on” <i>Bioinformatics: An interface between Computer Science and Biology</i> ” November 15-17, 2011	Jamia Milia Islamia University, New Delhi	Sudha Srivastava
81.	Inaugural Meeting of Bergey’s International Society for Microbial Systematics, May 19-23, 2011	Bergey’s Manual Trust and Chinese Society for Microbiology, Beijing, China	Indira P. Sarethy
82.	“Nanotechnology and Biosensors” December 28-30, 2010	Asia-Pacific Chemical, Biological and Environmental Engineering Society, <i>APCBEEES</i> , Hong Kong, China	Sudha Srivastava
83.	“Stem Cells and Cancer”, Dec 11-14, 2010	IIITM, Pune	Sujata Mohanty, Neeraj Wadhwa
84.	Participated in the EMBO Global Exchange Lecture Course on "Molecular and Evolutionary Genetics of Malaria", November 21 - Dec 4, 2010	NIMR, New Delhi, Pasteur Inst. Paris and INSERM Wellcome Centre for Molecular Parasitology, Lussane, Switzerland	Sujata Mohanty
85.	“One health – One earth: Sustainable future”, ASMcue conference for Undergraduate educators, San Diego, USA. May 20-23, 2010	American Society of Microbiology, ASM, Washington, DC	Krishna Sundari
86.	“Up scaling and mainstreaming Renewables for Energy Security,	Ministry of New and Renewable Energy,	Sanjeev K. Sharma,

	Climate Change and Economic Development”, October 27-29, 2010	GOI	Indira P. Sarethy, Rachna, Krishna Sundari, Pammi Gauba, Chakresh K Jain
87.	Recent Advances in Materials Science & Engineering: A Multidisciplinary Approach [RAMSE 2010], October 23-24, 2010	Jaypee University of Engineering and Technology, Guna, M.P.	Sudha Srivastava
88.	Life Sciences Conclave 2010, “Drug Discovery and Development”, August 18-19, 2010	Confederation of Indian Industries, Delhi	Sanjeev K. Sharma
89.	Medical Biotechnology-Vision 2020, April 16-18, 2010	Advanced Centre for Biotechnology, MDU, Rohtak	Sanjay Gupta
90.	“Data mining for Bioinformatics and Industrial applications”, January 14-16, 2010	JUIT, Wakanaghat, Himachal Pradesh	Sujata Mohanty, Neeraj Wadhwa
91.	Environmental Sociology. 2010	IDC Foundation, at Periyar Centre, New Delhi	Krishna Sundari
92.	“Synthesis of Enzyme Nanoparticle for Efficient Biosensing”, 2010	Inter University Accelerator Centre, New Delhi	Sudha Srivastava
93.	“Drosophila genetics”. 2010	JUIT, Wakanaghat, Himachal Pradesh	Sujata Mohanty
94.	International conference on “Contemporary Computing”, August 9-11, 2010	Department of Computer Science, JIIT, Noida	Chakresh K Jain
95.	“Surfactant Therapy for ARDS”, 2009	Institute of Engineering and Technology, Rajasthan	Rachana