1. Name of the Department: Centre for Interdisciplinary Research in Basic Sciences

2. Year of establishment: 2006

3. Is the Department part of a School/Faculty of the university?

No

4. Names of Programmes offered (UG, PG, M. Phil., Ph. D., Integrated Masters; Integrated Ph.D., D. Sc., D Litt etc.)

S. No.	Name of the Programme	Type of the Programme	Annual Intake
1	Integrated MSc in Bioinformatics	Self-Finance	36
	and Biotechnology*		
2	Ph. D. Programme**	Regular	
3	M. Phil in Interdisciplinary Basic	Regular	15
	Sciences#	_	

Programme started from the academic year 2013-14.

5. Interdisciplinary courses and departments involved

The Centre is meant for running the interdisciplinary courses. All the courses are interdisciplinary in nature.

6. Courses in collaboration with other universities, industries, foreign institutions, etc.:

NIL

7. Details of programmes / courses discontinued, if any, with reasons

Integrated MSc. in Bioinformatics and Biotechnology:

There exist courses of masters' programme in Bioinformatics and Biotechnology run by the departments of Bioinformatics and Biotechnology, respectively. The aim of establishment of the Centre is primarily to focus on the Interdisciplinary research and related teaching.

8. Examination System: Annual/ Semester/Trimester /Choice Based Credit System

S. No.	Name of the course	Examination System
1	Integrated M.Sc. in Bioinformatics and Biotechnology	Semester
2	PhD (Interdisciplinary)	Semester
3	M. Phil in Interdisciplinary Basic Sciences	Semester

9. Participation of the department in the courses offered by other Departments:

S. No.	Name of Faculty Member	Other department	
1	Dr. Zubaida A Ansari	University Polytechnic; Centre for Physiotherapy and	
		Rehabilitation.	
2	Dr. Shafeeque Ahmed Ansari	University Polytechnic, Department of Biosciences	
3	Dr. R. K. Brojen Singh	University Polytechnic	
4	Dr. M. I. Hassan	Department of Computer Science	
5	Dr. Asimul Islam	Department of Computer Science, Jamia Senior	
		Secondary School	
6	Dr. Shama Parveen	Jamia Senior Secondary School	

7	Dr. S.C. Thakur	Jamia Senior Secondary School
8	Dr. S.N. Kazim	Jamia Senior Secondary School
9	Ravins	Jamia Senior Secondary School

10. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors/Others)

S. No.	Post	Sanctioned	Filled	Actual (including CAS/MPS)
1	Professor	02	01*	02
2	Associate Professors	02	01**	01
3	Asst. Professors	10	09	09
4	Others			

^{*} One post vacant since the retirement of a professor on 31/07/2014.

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

S. No.	Name	Qualif icatio	Designation	Specialization	No. of Years of Experi	No. of Ph.D./M Phil M. Tech / M D students guided for the last four years	
					ence	Awar ded	In progress
1	Faizan Ahmad**	PhD	Professor	Protein folding and stability problems	37	8	8
2	Muharram Ali Khan*	PhD	Professor	Mathematical modelling with special reference to human diseases			2***
3	Zubaida A Ansari	PhD	Associate professor	Scanning probe microscopy and Nanobiotechno logy	14	1	3
4	Shafeeque Ahmed Ansari	PhD	Associate professor	Nanobiotechno logy and Biosensors	15	2	4
5	S. N. Kazim	PhD	Assistant professor	Molecular Biology of Hepatitis viruses and	7	3	4

^{**}One associate professor promoted to Professor under CAS

				Liver disease			
6	S. C. Thakur	PhD	Assistant	Reproductive	11	3	4
			professor	Biology,			
				Pharmacology			
				and			
				Toxicology			
7	Fareeda Athar	PhD	Assistant	Medicinal	9	4	4
			professor	Chemistry			
8	Shama Parveen	PhD	Assistant	Molecular	5	2	4
			Professor	Biology of			
				Respiratory			
				viruses,			
				Chikungunya			
				and Dengue			
			<u> </u>	viruses.			
9	R.K. Brojen	PhD	Assistant	Non Linear			
	Singh		professor	dynamics and			
				Systems			
1.0		DI D		Biology	<u> </u>		
10	Asimul Islam	PhD	Assistant	Protein	7		4
			professor	Folding and			
1.1	D II.	DI D	A •	Diseases	_		4
11	Romana Ishrat	PhD	Assistant	Computational	5		4
			professor	technique and			
12	D = i = D = 4 = 1	PhD	A:-44	Data mining Protein	03		4
12	Rajan Patel	PnD	Assistant		03		4
			professor	stability and			
				folding in different			
				solvent media			
13	Imtiyaz Hasan	PhD	Assistant	Structural	05	1	5
13	miliyaz nasan	FIID	professor	genomics	03	1	3
14	Ravins	M.Sc	Assistant	Biological			
14	IXAVIIIS	WI.SC	professor	network		<u> </u>	
			professor	HCLWOLK			

^{**} Retired on 31/07/2014

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

S. No.	Name	Year of Visit	Duration
1	Prof. R. D. Singh	2006	
2	Prof. Moosavi-Movahedi	2010	One week
3	Prof. M. Tomitori	2009, 2010, 2011	4 days each year

13.	Percentage of classes taken	n by temporary	y faculty – programm	e-wise information:	N/A

^{*} Left the Centre in 2010

^{***} Students transferred to Director, CIRBSc

14. Student Teacher Ratio

i. Integrated MSc. in Bioinformatics and Biotechnology (Programme discontinued):	3:1
ii. M Phil (IBS)	1.7:1
iii. Pre-PhD	1.1

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

S. No.	Post	Sanctioned	Filled	Actual
1	Clerk	1	1	1
2	Technical Officer#	-	1	1
3	Lab attendant*	1	1	1
4	Peon*	1	1	1

^{*}Contractual

16. Research thrust areas recognized by funding agencies:

Protein folding, Biosensors, Surface studies using AFM, Dye sensitized solar cells (biocells), Infectious Diseases, Medicinal Chemistry, Reproductive biology, Infectious diseases (Hepatitis viruses, Respiratory viruses), System Biology, Bioinformatics, Protein structure determination.

17. Number of faculty with ongoing projects* from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title, duration and grants received project-wise.

Project Title		Name of Funding agency	Grants received in lakh Rupees
Prof. Faizan Ahn	nad, Professor		
1. National	a) PROTEIN FOLDING: Would the	UGC	10.198
	Heat/Acid denatured State Serve as		
	Reference State for Protein Folding		
	b) Investigating the Involvement of Other	CSIR*	11.00
	Osmotically Active Solutes (Non-		
	methylamines) in Urea-Rich Cells in		
	Counteracting the Urea's Effect on Protein		
	Stability and Function		
	c) The critical role of five N-terminal residues		
	in the Folding and Stability of Yeast Iso-1	DST*	49.676
	Cytochrome-C		
2. International	a) Stabilization of Industrial and	Iran	
	Therapeutical Enzymes by Osmolytes	National	
		Science	
		Foundation	
	,	Total	70.874
Dr. Zubaida A A	nsari, Associate Professor		
1. National	a) Patterning of Nano-structured Metal	UGC	10.01

[#]Transferred From Dean Office

		1	1
	Oxides using Porous Alumina for		
	Biosensing applications.		
	b) Quantum Dots as novel probes for		
	Fluorescence Resonance Energy Transfer	DST*	37.90
	to understand molecular interactions and		
	reaction path ways		
2. International	Surface study of sub molecular covered	DST-JSPS	2.80
	functional materials using atom-molecular	(Japan)	
	tailored AFM tips	(**************************************	
l.	1	Total	50.71
Dr. Shafeegue Ah	med Ansari, Associate Professor		1
1. National	a) Effect of bio materials on the photo-	UGC	9.81
1. Tuttonar	conversion properties of TiO ₂ based Dye-		7.01
	sensitized Solar Cells		
	b) Photoanode preparation using	CSIR*	15.50
	nanostructured composite metal oxides	CSIK	13.30
2. International	for dye sensitized solar cells		
2. International			25 21
D C IN 'IZ		Total	25.31
	azim, Assistant Professor		
1. National	a) Identification of Hepatitis B virus		
	genotypes and investigation of molecular		
	mechanisms of life cycle of surface		
	mutant hepatitis B virus (HBV) in	DBT*	
	lamivudine resistant strains.	(extended)	90.79
	b) An <i>in vitro</i> study on the role of hepatitis		
	B virus x protein in the development of		
	hepatocellular carcinoma by investigating		
	its involvement in expression of Cyclin		
	A1/A2 and associated proteins.	DST	46.83
2. International			
		Total	137.62
Dr. Sonu Chand T	Thakur, Assistant Professor		
1. National	a) Study of anti-fertility efficacy and	UGC	10.23614
	toxicity of <i>Piper longum</i> in female rats.		
	b) Regulatory Role of Hyaluronan Binding		
	Protein 1 (HABP1) During	ICMR	24.79980
	Folliculogenesis and Cumulus Oocyte		
	Complex Expansion in Normal and		
	Polycystic Ovary Syndrome		
2. Internationa	3 3		
1	•		
1		 Total	35.03594
Dr. Faranda Athai	r, Assistant Professor	ı viai	J3.03374
1. National	a) Synthesis, characterization and	UGC*	9.30
1. Mational	a) Symmesis, characterization and	TOUC.	7.30

	111111111111111111111111111111111111111		
	biological activity of Heterocyclic		
	compounds		
	b) Synthesis, Characterization and		
	Antiamoebic Activity of Azole & Azine	DST	11.736
	Derivatives against E. <i>Histolytica</i>		
2. Internation	ona		
1			
		Total	21.036
	veen, Assistant Professor		
 National 	1 23	UGC*	10.15
	Chikungunya Viruses in Delhi (Principal		
	Investogator)		
	b) Cloning and Expression of G Protein of	DST	10.44
	Respiratory Syncytial Virus (RSV) in		
	Mammalian System and Characterization		
	of G Protein (Principal Investigator)		
	c) Cloning and Expression of Wild Type		
	and Mutant Envelope Protein Genes of	CSIR*	15.0
	Chikungunya Virus in Bacterial System		
	and there Biophysical		
	Characterization.(Principal Investigator)		
2. Internation		KACST	
1	Phylogenetic Analysis of Human	Terres i	
1	Respiratory Syncytial Virus strains from		
	Riyadh, Saudi Arabia. (Consultant)		
Total	Riyaun, Saudi Arabia. (Consultant)		35.59
	n Singh, Assistant Professor		33.37
1. National		UGC	6.798
1. Tuttonui	dynamics of p53 protein in cancerous		0.770
	cells		
	b) Synchronization in biological systems	DST	15.96
2. Internation		DST	13.70
∠. mtemati 1	ulia		
1		Total	22.758
Dr Asimul Isla	ım, Assistant Professor	1 Utai	44.130
1. National		CSIR*	17.0
1. Ivational	Functional Activity of Proteins in the	CSIK	17.0
	Presence of Different Sizes of Sugar		
	Osmolytes.		
		DST*	24.0
	,	ו פען	24.0
	agent on protein in the presence of sugar		
7 1 1.	osmolytes.		
2. Internation	ona		
<u> </u>		Tatal	41.0
		Total	41.0

Dr. Md Imtaiyaz Hassan, Assistant Professor					
1. National	a) Compilation of useful information for	UGC*	11.028		
	Indian diseases through an online				
	database management: A useful recourse				
	for researcher and public awareness				
	b) Structural and functional analysis of				
	putative conserved proteins from	ICMD*	24.00		
	common Indian pathogens	ICMR*	34.00		
	c) Folding and stability of naturally				
	truncated photosynthetic, pigment c- phycoerythrin from cyanobacteria				
	Phormidium tenu	DST*	39.20		
2. International	1 110111110120111	201	63.20		
Total 8		84.228			
Dr. Rajan Patel, A	Assistant Professor				
1. National	a) Gemini surfactants as a structure	UGC	8.96		
	stabilizer for proteins under thermal				
	denaturation.				
	b) Study the effect of Synthesized Ionic	DST*	33.70		
	Liquid on the Stability of Membrane				
	Proteins in presence/ absence of Water				
	c) Study the effect of Synthesized Gemini	GED Date	4.00		
	Surfactants having different spacer group	SERB*	12.00		
	on the stability of Membrane Proteins in				
2. International	aqueous medium				
2. International	Total		54.66		
	Total Total grant received by Cent	tro	578.82194		
	Total grant for ongoing projects 410.244				
	i otali grant for ongoing proj		1100211		

18. Inter-institutional collaborative projects and grants received a) National Collaboration b) International Collaboration

Collaborative Project		Name of Funding agency	Grants received
a) National	Dr. Shama Parveen a) Cloning and Expression of G Protein Gene of Group B Respiratory Syncytial Virus (RSV) in Bacterial and Mammalian Systems and their Antigenic as well as Biophysical	DBT	Jamia- 28.33 lacs, AIIMS- 29.7 lacs
	Dr. Syed Naqui Kazim b) Study the role of deregulation in multiple signaling cascades, genetic and epigenetic mechanisms in the	DBT's	78.48 (13.90 for JMI and 64.58 for Gauhati University,

		development of gall bladder diseases	Twinning	Assam)
		and carcinomas in the northeast	project	
		India.		
b)	Internatio	Stabilization of Industrial and	Iran National	
	nal	Therapeutical Enzymes by Osmolytes	Science	
			Foundation	
		Surface study of submolecular covered	DST-JSPS	2.80
		functional materials using atom-	(Japan)	
		molecular tailored AFM tips		
		Total		45.03
	Total Grant received from Project			623.85194
		Total Grant for on-going Pro	ojects	410.244

- 19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, etc. please indicate total grants received.

 Rs. 150 lacs.
- 20. Research facility / centre with

• state recognition NIL

• national recognition NIL

• international recognition NIL

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

22. Publications:

Summary of Research Papers/books published

(1-1-2007-30-9-2014)

Table for Research Publications of the Department

S. No.	Item	Total Numbers
1	Number of papers published in peer reviewed journals (national /	224
	international)	
2	Number of papers published in conferences	86
3	Monographs	
4	Chapters in Books	03
5	Edited Books	
6	Laboratory Manuals	
7	Articles in Magazines	
8	Editorials	02
9	Books with ISBN with details of publishers	01
10	Number listed in International Database (For e.g. Web of Science,	Scopus IDs:
	Scopus, Humanities International Complete, Dare Database -	7101861842,
	International Social Sciences Directory, EBSCO host, etc.)	7410318359,
		7005286215,
		25937668600,
		6602348560,
		7102748780,
		6507162981,

		7006302909,
		8085806200,
		36611685200,
		36763487300,
		26221807200,
		7403737641
11	Citation Index – range / average	0 - 46/5.26
12	SNIP	0 - 2.422/0.87
13	SJR	0 - 2.092/0.394
14	Impact Factor – range / average	0 - 7.5/2.36
15	h-index	0 - 10

Table for Book, Book chapter and editorials of Individuals

	or Book, Book chapter and editorials of Individuals		
S. No.	Item	Details, publisher and year of publication etc.	
1	Books with ISBN with	R. K. Brojen Singh (Aug. 2009) Localization in Thin Films:	
	details of publishers	Theoretical and Numerical Studies VDM Verlag. ISBN-10:	
		3639180097	
2	Edited Books	NIL	
3	Monographs	NIL	
4	Chapters in Books	Dr. S.G. Ansari, Dr. Z. A. Ansari	
		Nanostructured Metal Oxides: Applications to biosensing"	
		Vol. 2, Chapter 7, Metal Oxide Nanostructures and Their	
		Applications, American Scientific Publishers (ASP), USA	
		(2010). ISBN: 1-58883-170-1	
		Dr. S.G. Ansari, Dr. Z. A. Ansari	
		Semiconductor Nanomaterials based Biosensors: Concept,	
		Design and Applications, Encyclopedia of metal oxide	
		nanomaterials, American Scientific Publishers (ASP), USA	
		(to be published in 2014).	
		Dr. M.I. Hassan, Dr. Faizan Ahmad	
		Structural diversity of class I MHC-like molecules and its	
		implications in binding specificities. Advances in Protein	
		Chemistry and Structural Biology, Chapter 6 – Volume 83,	
		2011, Pages 223–270, Elsevier Inc., ISSBN: 1876-1623	
		R. Ramaswamy, R. K. Brojen Singh, C. Zhou and J. Kurths	
		(2009) Stochastic synchronization Nonlinear Dynamics and	
		Chaos: Advances and Perspectives, M. Thiel et al., Editors	
		(Springer, Berlin, 2010).	
5	Laboratory Manuals	NIL	
6	Articles in magazines	NIL	
7	Editorials	Guest Editor: Faizan Ahmad	
		Special Issue on Functional Residues in Proteins, Journal of	
		Amino Acids, Article ID 606354, 1, Vol. 2011, page 2011.	
		Guest Editors: S. G. Ansari, Z. A. Ansari,	
		A Special Section on Nano-Bio Materials and Systems,	

		Science of Advanced Materials, 4, 93-95 (2012).
8	Working papers	NIL
9	Exhibitions	NIL
10	others	NIL

Table for Research Publications of Individuals

Details given in annexure ERD I

23. Details of patents and income generated:

Korean Patent File No. WO 2014025191 A1 Publication date: 13 Feb 2014

Title: Novel tetrazolo hydrazine derivatives and pharmaceutical composition comprising same as active ingredient for preventing or treating cancer

Inventors: In Ho Choi, Athar FAREEDA, Roouf Bhat ABDUL

Indian patent Filed on 25/11/2014 file no. 3406/DEL/2014

Title: Hydroquinone electrochemical sensor based on Manganese doped titanium dioxide,

Inventors: S G Ansari, H Fouad, Z A Ansari

24. Areas of consultancy and income generated:

NIL

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

Prof. Faizan Ahmad	Iran, USA
Dr. Zubaida Ansari	Japan, Saudi Arab, Pune University
Dr. Shafeeque Ansari	Korea, Saudi Arab, Pune University
Dr. S. N. Kazim	Germany, ILBS
Dr. Imtaiyaz Hassan	USA, AIIMS
Dr. RK Brojen Singh	JNU

26. Faculty serving in

a) National Committees

Society of Biological Chemists (India) (1995-todate)
Member, Indian Biophysical Society (1996-todate)
Member, Society of Biosciences (1996-todate)
Advisor, UPSC.
Member, Sectional Committee-IX, INSA, 2009.
Member, C.S.I.R. NET-JRF Examination Committee.
Member, S.R.F. and R.A Selection Committee (C.S.I.R.)
SET, Maharashtra

b) International Committees

Prof. Faizan Ahmad	Member, American Society of Biochemists (1983-1989)
	Member, Canadian Biochemical Society (1981-1987)
	Member, ITCP, Trieste (1996-todate)
	American Society of Biochemistry and Molecular
	Biology(2004 – to date)
Dr. Zubaida Ansari	Japanese Society of Applied Physics
Dr. Md. Imtaiyaz Hassan	Indian Science Congress
	Indian Biophysical Society
	Indian Crystallography Society
	Society for Biological Chemists, India

c) Editorial board

L'ultoriai boaru	
Prof. Faizan Ahmad	Advisory Member of Editorial Board,
	Iranian Journal of Biochemical Sciences
	Journal of Iranian Chemical Society
Dr. Shafeeque Ansari	Nature Scientific Research
	Sensor Letters
	Science of Advanced Materials
	Review of Advance Science and Engineering,
	Energy and Environment Focus,
	Materials Focus,
	ISRN Nanotechnology
Dr. Zubaida Ansari	Sensor Letters
	Science of Advanced Materials
	Materials Focus
	Energy and Environment Focus
Dr. RK Brojen Singh	International Journal of Systems Biology,
	Scientific Research Journal
Dr. Imtaiyaz Hassan	Journal of Nat Science Biology and Medicine
	Journal of Integrative OMICS
	Journal of Contradicting Results in Science
Dr. Fareeda Athar	Future Tech: An International Journal of Science and
	Technology

d) Any other (please specify) (Fellow /Member of any society/ Academy etc)

Prof. Faizan Ahmad	Member, Academic Council, Jamia Millia Islamia, New Delhi. Member, Courses of Studies, Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi. Member, Faculty Committee, Interdisciplinary Sciences, Delhi University; Member, Faculty Committee, School of Life Sciences, University of Hyderabad.; Member, Board of studies, Biochemistry, Kashmir University; Member, Board of Studies, Department of Medical Elementology and Toxicology, Faculty of Science, Jamia Hamdard, New Delhi
Dr. Z. A. Ansari	Executive Council Member, Society of Nanobiotechnology. Member of the International Community of Sensors and Transducers; Muslim Association for Advancement of Science (Life Time Membership). Life member of Indian Biophysical Society
Dr. Shafeeque Ansari	Executive Council Member, Society of Nanobiotechnology. Life member of Indian Biophysical Society
Dr. Asimul Islam	Life member of Indian Immunology Society Life member of Society of Biological Chemists Life member of National Magnetic Resonance Society Life member of Indian Biophysical Society Member, The European Peptide Society
Dr. Romana Ishrat	Life member of International Association of Computer Science and Information Technology
Dr. Rajan Patel	Life member of Indian Biophysical Society

27. Faculty recharging strategies

Name of the Course/ Summer	Place	Duration
School		
Dr. S. N. Kazim		
Practical training course International	International Centre for	22 October - 3
workshop on 'Mammalian Cell	Genetic Engineering and	November 2007
Culture for Heterologous Gene	Biotechnology (ICGEB),	
Expression and Reporter Gene	New Delhi, India	
Analysis		
94 th Orientation Programme, organized	Academic Staff College,	October 18, 2010 to
by the Academic Staff College, Jamia	Jamia Millia Islamia, New	November 16, 2010)
Millia Islamia, New Delhi	Delhi.	
First Refresher course in Basic	Academic Staff College,	May 6, 2011 to May 27,
Sciences (Interdisciplinary) organized	Jamia Millia Islamia, New	2011)
by the Academic Staff College, Jamia	Delhi.	
Millia Islamia, New Delhi		
Fourth Refresher course in Basic	Academic Staff College,	May 12, 2014 to June
Sciences (Interdisciplinary) organized	Jamia Millia Islamia, New	02, 2014
by the Academic Staff College, Jamia	Delhi.	

M.II. 11 . M. D.II.	T	T
Millia Islamia, New Delhi		
Dr. S. C. Thakur	T + 1 + 2 + 22 = 11	Leath
Orientation Course	Academic Staff College,	13 th April to 10 th May
	Jamia Millia Islamia, New	2010
	Delhi	cth a contact
Refresher Course in Basic Sciences	Academic Staff College,	6^{th} May -27^{th} May 2011
(Interdisciplinary)	Jamia Millia Islamia, New	
D.C. I. G. (G. : IW)	Delhi	11th > 6 2010 1 4 1
Refresher Course (Special Winter	Academic Staff College,	11 th May 2012– 1st Jan
Programme)	Jamia Millia Islamia, New	2013
D. E. J. Ad.	Delhi	
Dr. Fareeda Athar	1	Liothir
95 th Orientation Programme, organized	Academic Staff College,	18 th January to 15 th
by the Academic Staff College,	Jamia Millia Islamia, New Delhi.	February 2011
Refresher Course in Basic Sciences	Academic Staff College,	6 th May – 27 th May 2011
(Interdisciplinary)	Jamia Millia Islamia, New	
1 2/	Delhi	
Special Winter Programme, organized	Academic Staff College,	11 th December 2012-1 st
by UGC-ASC	Jamia Millia Islamia, New	January 2013
	Delhi	
Dr. Shama Parveen		
Practical course on "Mammalian Cell	International Centre for	22 nd October to 3 rd
Culture for Heterologous Gene	Genetic Engineering and	November 2007
Expression and Reporter Gene	Biotechnology (ICGEB),	
Analysis	New Delhi, India	
94th Orientation Course	Academic Staff College,	18 th October to 16 th
	Jamia Millia Islamia, New	November 2010
	Delhi, India	
Ist Refresher Course in Basic Sciences	Academic Staff College,	6 th to 27 th May 2011
(Interdisciplinary)	Jamia Millia Islamia, New	-
	Delhi, India	
Fourth Refresher course in Basic	Academic Staff College,	May 12, 2014 to June
Sciences (Interdisciplinary) organized	Jamia Millia Islamia, New	02, 2014
by the Academic Staff College, Jamia	Delhi.	
Millia Islamia, New Delhi		
Dr. Asimul Islam		
94 th Orientation Programme	Academic Staff Collage,	18 October to 16
,	Jamia Millia Islamia	November 2010
1 st 3-Week Refresher Course in Basic	Academic Staff Collage,	6 th May to 27 th May
Sciences (Interdisciplinary)	Jamia Millia Islamia	2011
Dr. Romana Ishrat	,	
92nd Orientation Programme	Academic Staff Collage,	April 2010
	Jamia Millia Islamia	
1st Refresher Course in Basic Sciences	Academic Staff Collage,	06 May to 27 May, 2011

(Interdisciplinary)	Jamia Millia Islamia	
1 st Three-week Special Winter	Academic Staff Collage,	December 11, 2012 to
Program (Refresher Course)	Jamia Millia Islamia	January 01, 2013
Dr. RK Brojen Singh		
1st Refresher Course in Basic Sciences	Academic Staff Collage,	06 May to 27 May, 2011
(Interdisciplinary)	Jamia Millia Islamia	
Dr. Md. Imtaiyaz Hassan		
95 th Orientation Programme	Academic Staff Collage,	18 January to 15
	Jamia Millia Islamia February 2011(4	
2 nd 3-Week Refresher Course in Basic	c Academic Staff Collage, 3 rd May to 23 rd Ma	
Sciences (Interdisciplinary)	Jamia Millia Islamia	2012 (3 weeks)

 Conferences/Seminars/workshops attended by faculty members (Details given in annexure-ERD II)

International/National level

86

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects
- Intra-departmental students

100% 100%.

- Inter-department students (based on 35 request received)
- percentage of students doing projects in collaboration with other universities / industry / institute
- Inter-University students (based on request received)

100%.

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

S. No.	Award	Agency	Year				
Prof. Fa	Prof. Faizan Ahmad						
1	FNA: Fellow of Indian	Indian National Science					
	National Science Academy	Academy					
2	FNA Sc., Fellow of National	National Academy of					
	Academy of Sciences	Sciences					
3	Norman H. Dill Memorial		1997				
	Gold Medal						
4	Pride of Delhi	Government of Delhi	1997				
Dr. S. N	. Kazim						
5	International Fellowship of	German Grant SFB479	November-December				
	DST-DAAD	(Sonderforschungsbereich)	2008				
		Germany					
Dr. S. C	. Thakur						
	DST Young Scientist	DST	2006				
Dr. Sha	ma Parveen						
	DST Young Scientist	DST	2006				
Dr. Asii	Dr. Asimul Islam						
	SERB Young Scientist	SERB	2012				
Dr. Md.	Imtaiyaz Hassan						

	Indo-US Research	Indo-US Science &	3 months in 2011
	Fellowship	Technology Forum	
	Best ORAL Presentation	Recent Trends in	2012
	award	Macromolecular Structure	
		and Function organized by	
		the University of Madras	
	Best ORAL Presentation	Indian Biophysical Society	2012
	award	Meeting, organized by the	
		University of Madras	
Mr. Rav	vins	•	
	109 th Orientation Programme	Academic Staff Collage,	5 th August to 3 rd
	_	Jamia Millia Islamia, New	September 2014
		Delhi	(4 Weeks)

• Doctoral / post doctoral fellows

S. No.	Name	Award	Agency	Year
1	Dr. Zehra Bano	RA	CSIR	2011
2	Dr. Amresh	Kothari Fellow	UGC	2013-14

• Students

S. No.	Name	Award	Agency	Year
1	Ms. Masarrat Afroz,	Women Scientist-	DST	July 2011.
	PhD student under Dr.	A (WOS-A):		
	S. N. Kazim	Grant of Rs.		
		16,56,000/- for		
		three years.		

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

S. No.	Name of the conference / seminar /workshop	Funding & sponsoring authorities	Year	Remarks
1	Interdisciplinary Science Conference-2007 on "Recent Trends in Research in Biological Sciences"	JMI, Suppliers	December 7, 2007	More than 500 delegates
2	Interdisciplinary Science Conference-2008 on "Mathematics in Biology"	JMI, Suppliers	December 4, 2008	150 delegates
3	Interdisciplinary Science Conference-2009 on "Interface between Chemistry and Biology"	DBT	October 8, 2009	350 delegates
4	A 3 day International- Interdisciplinary Science Conference-2010 on	DST, DRDO, CSIR, MNRE, DBT, ICMR, INSA,	from 04 Dec to 06 Dec 2010	300 delegates

	Nanobiotechnology: "An	Industrials and		
	Interface between Physics and	suppliers		
	Biology"			
5	International Interdisciplinary	DST, DRDO, CSIR,	November	About 300
	Science Conference (I-ISC	DBT, ICMR, INSA,	15-17,	delegates
	2011) Bioinformatics: "An	Industrials and	2011	
	Interface between Computer	suppliers		
	Science and Biology"			
6	International Interdisciplinary	DST, DRDO, CSIR,	December	About 350
	Science Conference (I-ISC	DBT, ICMR, INSA,	8-10, 2012	delegates
	2012) Protein Folding and	Industrials and		
	Diseases	suppliers		
7	National Conference on Recent	DST, DRDO, CSIR,	December	About 300
	Trends in Protein Structure	DBT, ICMR, INSA,	15-17	delegates
	Biology-2013 (NCRTPSB-2013)	Industrials and		
		suppliers		
8	National Conference on Recent	DST, DRDO, CSIR,	November	About 130
	Trends in Molecular Virology-	DBT, ICMR, INSA,	17-19	delegates
	2014	Industrials and		
		suppliers		

31. Code of ethics for research followed by the departments

Departmental/Individual level

All the students are individually and in group are made aware of intellectual property rights, plagiarism and data violation by their supervisors.

University has three Institutional ethical committees, namely

- i. Institutional Ethics Committee (IEC) related to the biomedical research on human participants: The Centre for Interdisciplinary Research in Basic Sciences is responsible to review the scientific content and ethical aspects of proposals related to the biomedical research on human participants.
- ii. Institutional Ethics Committee for Biosafety: Its responsibility is on the department of Biosciences.
- iii.Institutional Ethics Committee for Animals: Its responsibility is on Centre for Physiotherapy and Rehabilitation.

32. Student profile course-wise:

S. No.	Name of the Course	Applications		Applications Selected		P	ass
	(refer to question no. 4)	receiv	received		Female	perce	entage
						Male	Female
1	Integrated MSc in bioinformatics	137	7	17	21	100%	
	and Biotechnology (Programme					95.23%	0
	discontinued)						
2	M. Phil (IBS)						
3	Batch 2013-14	99	10	08		_	
4	Batch 2014-15	140	08	12		-	

S. No.	Name of the Course		Applica	tions	Sel	lected	Pass
	(refer to question no. 4)		receiv	ed	Male	Female	percentage
							Male Female
	Ph. D. program with two sem	ester	s pre-PhD	teaching	*		
5	Batch 2007-08		03	02	01		
6	Batch 2008-09			08	04	-	
7	Batch 2009-10		92	13	07	100%	100%
8	Batch 2010-11		145	08	03	100%	100%
9	Batch 2011-12		47	08	05	100%	100%
10	Batch 2012-13		46	08	06	100%	100%
11	Batch 2013-14		47	08	05	100%	100%
12	Batch 2014-15		22	ı	07	-	-
	* Drop outs in total from above	ve me	entioned 8 l	oatches =	= 11		

33. Diversity of students

S. No.	Name of the Course (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
1	Integrated MSc in Bioinformatics and Biotechnology (Programme discontinued)*	5 out of 38 (13.15%)	26 out of 38 (68.42%)	7 out of 38 (18.42%)	Nil Nil
2	M. Phil (IBS) Ist batch M. Phil (IBS) IInd batch	8 out of 12 (66.67%) 8 out of 18 (44.44%)	1 out of 12 (8.33%) 2 out of 18 (11.11%)	3 out of 12 (25%) 8 out of 18 (44.44%)	Nil Nil
4	* Based on Intermediate (+2) certificates (2007 to 2011 batches)				

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

S. No.	Competitive Exam	No. of students
1	NET	10
2	GATE	16
3	SET	
4	Others (ICMR, DBT, UGC, SLET, UPCET, CSIR-JRF)	19
5	Maulana Azad National Fellowship	9

35. Student progression

S. No.	Student progression	Percentage against enrolled
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S. No.	Student progression	Percentage against enrolled			
1	UG to PG	100%* (Course discontinued)			
2	PG to M.Phil.	N/A			
3	PG to Ph.D.	2 out of the batch of 35 (Course			
		discontinued)			
4	Ph.D. to Post-Doctoral	5 students joined as postdoctoral fellow			
5	Employed				
	Campus selection	No Campus selection			
	Other than campus recruitment	5 PhD students got employment as faculty			
	-	members or Manager.			
6	Entrepreneurs				
	* Due to absence of choice all the students admitted to Integrated M.Sc in				
	Bioinformatics and Biotechnology at the UG level had necessarily to join the PG level				
	for getting the relevant degree.				

36. Diversity of staff

S. No.	Percentage of faculty who are graduates		
1	of JMI	4 out of 12	
2	from other universities within Delhi	No	
3	from universities from other States	8 out of 12	
4	from universities outside the country	No	

- 37. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period: Seven faculty members.
- 38. Present details of infrastructural facilities with regard to
 - a) Library: Departmental library (Number of Books: 250)
- b) Internet facilities for staff and students:

Yes Four

c) Total number of class rooms:

No (LCD project)

d) Class rooms with ICT facility:e) Students' laboratories:

Two computer Lab

f) Research laboratories:

13 Research Labs

- 39. List of doctoral, post-doctoral students and Research Associates
- a) from the host Institute/university

S. No.	Doctoral Students	Post-doctoral students	Research Associates
1	Amit Kumar	Abbul Bashar Khan	
2	Danish Idrees		
3	Farah Deeba		
4	Gurpreet Kaur Narula		
5	Heisnam Dinachandra Singh		
6	Khalid Anwer		
7	Md. Rizwan Alam		
8	Md. Jahoor Alam		
9	Muzaffar ul Hasan Mir		

10	Safikur Rahman				
11	Shah Ubaidullah				
12	Sheeza Khan				
13	Sobia Zaidi				
14	Syed Ali Azam				
15	Syed Ausaf Ali				
16	Zaheenul Islam Siddiqui				
17	Samia Haseeb Khan				
18	Seema Naaz				
* Based	* Based on 58 students admitted in five batches from 2007-12.				

b) from other Institute/university

S. No.	Doctoral Students	Post-doctoral	Research
		students	Associates
1	Abu Hasanath Md. Golam Sarwar	Amresh Prakash	
2	Archana Bhaskar		
3	Aruna Rani		
4	Bilal Ahmad		
5	Dinesh Mani Tripathy		
6	Farha Naz		
7	Gurumayum Reenaroy Devi		
8	Huma Naz		
9	Ilyas Beg		
10	Jitendra Kumar Maurya		
11	Manoj Kumar Patel		
12	Manish Chandra Chaudhary		
13	Masarrat Afroz		
14	Md. Anzarul Haq		
15	Md. Asif Dar		
16	Md. Shakir Husain Haider		
17	Mohd. Arshad		
18	Mohammad Arif		
19	Mohd Yunus Wani		
20	Meena Kumari		
21	Moin Ishrat		
22	Nazia		
23	Parvez Khan		
24	Prachi Joshi		
25	Ravins		
26	Sabab Hasan Khan		
27	Sabihu rahman Farooqui		
28	Shafeeq T		
29	Tazeem		
30	Tauhfa		
			•

31	Wajihul Hasan Khan		
32	Bharti Sharma		
33	Rinki Minakshi		
34	Md. Tabish Rahman		
35	VIpul Shukla		
35	VIpul Shukla		
36	Sheetal Chaudhary		
37	Gaurav Kumar		
38	Bijaya Haobam		
39	Rais Ahmad Dar		
40	Vinay Sagar		
* Based	on 58 students admitted in five batches from 200	07-12.	

40. Number of post graduate students getting financial assistance from the university.

S. No.	Doctoral Students	Non-NET	Other fellowships
		fellowship	•
1	Farha Naz		CSIR
2	Huma Naz		ICMR
3	Parvez Khan		ICMR
4	Meena Kumari		CSIR
5	Manoj Kumar Patel		CSIR
6	Amit Kumar		CSIR
7	Danish Idrees		Maulana Aazad
8	Syed Ausaf	-	DST Project
9	Muzaffar Mir	-	UGC project
10	Farha Deeba	Yes	Maulana Aazad
11	Sobia Zaidi	-	ICMR
12	Bilal Ahmad Ahangar	Yes	
13	Md. Aasif Dar		CSIR Project
14	Khalid Anwar		Maulana Aazad
15	Zahoor Alam		Maulana Aazad
16	Abu Hasanat Gulam Sarver		Maulana Aazad
17	Moeen Ishrat	Yes	
18	Anzarul Haq		CSIR
19	Shabab Khan		
20	Ilyas Beg		UGC Project
21	Sheeza Khan	-	CSIR
22	Shah Obaidullah	-	DBT
23	Zaheen ul Islam	Yes	
24	Syed Ali Aazam		DBT Project
25	Sabihur Rehman Farooqi		DBT Project
26	Masarrat Afroz		DST Women
			fellowship
27	Mohd Arshad		Maulana Aazad

28	Tazeem		ICMR
32	Dinesh Mani Tripathy		Project
33	Manish Chandra Chaudhary		Project
34	Nazia		UGC
35	Md. Shakir Hussain Haider	Yes	
36	Md Arif		UGC
37	Archana Bhaskar		ICMR
38	Iram Bilal		Maulana Azad
39	Moin Ishrat		CSIR Project
40	Sumra Shahid		Maulana Azad
41	Khalida Nasreen		Maulana Azad
42	Priyanka Sinha		ICMR
43	Upendra Kumar Singh		UGC
44	Shagufta Khan		CSIR
45	Fauzia Mossarat		DST-INSPIRE

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

Yes, faculty members conduct frequent meetings to discuss the informal feedback obtained from the students enrolled for the courses. Faculty members propose new programme, if any, by blending the obtained feedback from the students and also feelings based on the available expertise and facilities. Subsequently, the designed outline of the curriculum of the proposed new programme with appropriate justifications are placed in front of the <u>subject expert committee</u> (comprising of at least three senior and external experts from other university). Once it gets approval from subject expert committee, new programme with relevant information is placed in front of the standard <u>Committee of studies (CoS)</u> and later to the <u>Board of Managemet (BoM)</u> for further approval. Then after it goes to the university AC and EC for approval. For instance, recently, the Centre has got the permission to initiate a new programme namely; M.Sc. in Biophysics.

42. Does the department obtain feedback from

- a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?
 - Yes, in CoS meeting. The feedbacks are discussed in context with knowledge advancement in various CoS meetings and if found suitable, then it is implemented.
- b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
 - Yes, informal feedback which is sometimes discussed in person with concerned faculty by the director to rectify the problem.
- c. alumni and employers on the programmes offered and how does the department utilize the feedback?: N/A

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

S. No.	Name	Present affiliation
1	Asimul Islam	Asistant Professer, CIRBSc., Jamia Millia Islamia

2	Rinky Minakshi	Institute of Home Economics, New Delhi	
3	Shazia Jamal	School of Medicine, Wayne State University, USA	
		Assistant Professor, Chennai	
4	Md Khurshid Alam Khan	Department of Chemistry & Biochemistry, University of	
		Montana, USA	
		Assistant Professor, Chennai	
5	Mohd. Wahid	Department of Biologics Development Center, Dr.	
		Reddy's Laboratories	
		Assistant Professor, Saudia	
6	Nitesh Kumar Poddar	Rice University, USA	
		Assistant Professor, Barelli	
7	Hamidur Rahaman	Department of Biotechnology, Manipur University,	
		Imphal	
8	Tanveer Ali Dar	Department of Biochemistry, University of Kashmir	
9	Md Tabish Rehman	Interdisciplinary Biotechnology Unit, Aligarh Muslim	
		University	
10	Syed Ikramul Hasan	Guest Faculty, JMI	
		IISER Bhopal	
11	Dr. safikur Rahman	SERB Young Scientist, ACBR, University of Delhi	
12	Dr. Shah Ubaidullah	RA at NII	
13	Manoj Kumar Patel	DSK fellow, JNU	

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

Please see Annexure ERD-IV

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

Audio Video Aids (LCD and overhead projectors)

Group Seminar (weekly or monthly basis)

Six month progress review by student progress report and presentation

Regular lab meetings to monitor progress of research work

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

The task is accomplished during the regular faculty meetings followed by its reporting to the Centre's CoS and BoM.

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

Essential involvement of students and faculty members is in organizing the annual conferences (national and/or international), seminars and extension lectures.

- 48. Give details of "beyond syllabus scholarly activities" of the department.
 - i. The Centre coordinated the Refresher course in Interdisciplinary science conducted by the UGC's Academic Staff College at JMI during 2011, 2012 and 2013.
 - ii. Conducted the Manipur film festival
 - iii. Industrial presentation
 - iv. Product/software demo, workshop and training

- 49. State whether the programme/ department is accredited/ graded by other agencies? If yes, details. : N/A
- 50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

One of the objectives of the Centre is to create interdisciplinary knowledge by employing scientist from basic science and life science to work on common interdisciplinary problems. Therefore, the Centre is devoted in generating new knowledge in Interdisciplinary science and research by interfacing basic science and life science. In the last five years, as a whole, the faculty published 155 publications and represented Centre at various national and international conferences seminar. Faculty member are pursuing externally funded research grants of Rs. 6.1 million sourced from various national and international funding agencies. Even though the Centre is in its early years of establishment, 13 students have been awarded for their PhD degree in interdisciplinary science in last five year. Centre has also established a trend of organizing international or national conference/seminars every year in interdisciplinary science by inviting eminent scientist and research all over the country and globe. The Centre is also serving as a nodal training centre for training of undergraduate and master students of our campus and other universities by providing them lab facilities and guiding them for research skills so that they can generate interest in interdisciplinary research for higher studies. Faculty members have also helped UGC-Academic Staff College by coordinating a refresher course in Interdisciplinary basic sciences, which is a new theme in-itself.

51. Future plans of the department.

A. Research Activities

Prime focus with respect to future plans will be promoting the advance research and teaching in the interdisciplinary science areas by interfacing basic sciences (Chemistry, Physics, Mathematics and Computer Science) with life sciences. Both lateral and vertical development of research including the research oriented teaching will be addressed. In addition, admitting students from all the disciplines of science and preparing them to understand and undertake the interdisciplinary research areas will be the important objectives of the Centre during the coming time. Keeping in view of these major challenges and types of expertise and facilities available among faculty members of the Centre, we would plan for diversified types of conferences, workshops, seminars and extension lectures and related activities, which is also among one of the important objectives of the Centre. These proposed exercises will not only benefit our students and faculty members but also will provide a fertile ground and prosperous platform to nurture and nourish the interdisciplinary research.

The future plans of the centre will be based on the following objectives:

- To promote interdisciplinary scientific research, advanced teaching and training in chosen areas of interdisciplinary basic sciences leading to M. Phil and Ph.D. degrees;
- To provide a forum for interaction among scientists, research workers, teachers and students with national and international experts;
- To provide research facilities to individual workers or research groups, especially to those who are deprived of such facilities for extended periods;

- To create tenure-based short term and long term chairs and visiting positions for experts in identified areas for interaction with the Centres' faculty, carrying out research and exchange of ideas; and
- To conduct seminars, workshops, conferences and extension lectures to promote interdisciplinary research in basic sciences.

Based on the expertise available with various research groups within the Centre which are consistently involved in inter- as well as intra-group research interaction, issues related to the interface of life science with basic sciences are expected to be addressed under the future plans.

B. Teaching Activities

- (i) Pre-Ph.D. Course: The Centre will continue running Pre-Ph.D. course of 2 semesters in its modular forms (one for the M.Sc. in Basic Sciences and another for M. Sc. in Life Sciences) which is a pre-requisite for the award of Ph.D. degree. The total no. of credits of this course is 24.
- (ii) M. Phil (Interdisciplinary Basic Sciences) course: Beginning the Academic Session 2012-2013 the Centre is starting a new course of 4 semesters. In this course M.Sc. degree holders of both stream, Basic Sciences and Life Sciences will be admitted. In the first semester basic scientists will be introduced biology and life scientists will be introduced basic science. This course has a 2 semester research component with dissertation. The total no. of credits of the course is 80.
- (iii) M. Sc. (Biophysics) course: Beginning the Academic Session 2015-2016 the Centre is starting a new course of 8 semesters. In this course B.Sc. degree holders of both stream, Basic Sciences and Life Sciences will be admitted. The total no. of credits of the course will be 192.
- 52. Detail major five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

We have identified the following five points for strength, weakness, opportunities and challenges which are explained in brief against each point.

Strengths

- 1. Interdisciplinary teaching and research covering wide range of diversified expertise in science We feel that the Centre has got strength in interdisciplinary teaching and research since the faculty members are from basic sciences and life sciences. Teachings in Interdisciplinary areas at different UG/PG levels are also a part of the UGC's tenth plan. This will help us to accommodate brilliant ideas and innovative proposals to promote teaching, research, academic excellence in interdisciplinary science.
- 2. Simultaneous lateral and vertical knowledge development in many areas.
 - By regularly exchanging information with basic and life science communities, we will be able to support the development of interdisciplinary science in chosen areas. For example, the faculty members are able to contribute in the understanding the life science problems by utilizing their basic science knowledge. It will help in developing the capacity to address and assists other interdisciplinary problem which the Centre may choose in future.
- 3. Unique centre in the country devoted to interdisciplinary research

 The Centre was established in the year 2006 with the aim to recognize the fact that each modern development in biology has its roots in basic sciences, which is a unique theme in its own. In order to achieve its goal the Centre has appointed both basic scientists and life scientists as faculty

members for research.

4. Provide the knowledge and the vocabulary to understand other disciplines in addition to the necessary communication skills

When the faculty members from different disciplines of science interact with each other they need to understand the language of each other to solve or understand their problems. This is a great strength of the Centre's faculty members that they can understand each other's language to work on common research problem. The PhD students are also taught the basic levels of other science disciplines during their pre-PhD course. This helps the students for interdisciplinary research and teaching.

5. Sharing resources and facilities, acquisition of research grants, building teams and networks, and avoiding duplication of effort in research.

All the facilities/resources cannot be accumulated at one place due to various limitations. Therefore, the Centre provides a place where faculty members from different science disciplines can setup facilities in their respective research areas by obtaining immense research grants from various government funding agencies through their innovative interdisciplinary research ideas. This allows us to share facilities with others. This also helps in building teams, sharing ideas and avoids the duplication of similar facilities within the university and saves the infrastructure cost.

Weaknesses

1. Lack of required infrastructure

Even though one of our strengths is sharing of resources and facilities, it requires huge amount of infrastructure and cost.

2. Lack of research funding

Every facility creation is always subject to availability of sufficient fund. With interdisciplinary approach of research the requirement of scientific instruments is really large which directly requires ample amount of research grants and such concepts are not being accepted easily by the funding agencies.

3. High-risk nature of the research

The interdisciplinary research work has high nature of risk due to the (i) partial awareness which may create unknown/unexpected problems; (ii) The research outcome may be strange resulting in loss of fund and time and (iii) the risk to the scientist/students when working without taking proper care.

ou The nature of risk in interdisciplinary research is high due to partial awareness.

4. Lack of critical mass in the community for the dissemination of results

Even though the research output is itself a reward for a scientist, sometimes the results are not well recognized by the scientific community and the in general. This may be due to limited utilization of results for the benefit of society or sometime it requires long time to make it realize the useable outcome of research.

5. Students placement in academic and industrial sector especially in India

A negative aspect of interdisciplinary studies is the student's placement in academic and industries. In academics the students do not get placed because of non-school subjects while the industrial sector needs to grow to employ such students. This is due to both of lack of progress and of recognition of the role of interdisciplinary research.

Opportunities

1. Interdisciplinary research and development.

The present era is of applied research and in our view interdisciplinary research is the best research which is applied in many ways. This is a big opportunity for science at the Centre to generate new knowledge in this emerging field.

2. Discipline-based university departments

The general university teaching is based on the discipline and department wise. It is an opportunity for Centre's faculty members to share their knowledge and experience with other departments and Centre. They may take part in their curriculum design and teaching.

3. Creation of greater Interaction between disciplines

Since basic scientist and life scientist work together at a common place/lab, it creates opportunity for all continuous interaction between disciplines.

4. Opportunities for students those are not placed/admitted in any other science discipline

Due to competitive nature of the admission process and limited seats in discipline based programs, many students do not get admission/placed. The interdisciplinary science based teaching provides opportunity for such students to continue their academic career. At the same time it's a challenge for interdisciplinary science teacher to develop an innovative curriculum to address the needs of students with mixed backgrounds.

5. Theoretical simulation and modelling of results obtained from interdisciplinary research

The theoretical simulations and modeling help us in predicting theories and mechanisms of interaction for many unseen events and help to visualize them at a monitor. Many scientists are able to get excellent research results but are unable to propose the mechanism or theory behind that phenomenon. Therefore, it's an opportunity for interdisciplinary scientists to simulate those results, compile novel data base and propose suitable mechanisms or theories.

Challenges

1. Students placement in academic and industrial sector

Being non-school subject with few industries in interdisciplinary field it's a challenge to set suitable policy and provide opportunity for manpower induction/utilization.

2. New course/curriculum design

It is one of the greatest challenges to design interdisciplinary course which is suitable to all science disciplines. The Centre cannot run courses only in the basic or life sciences as most of these courses already exist. Therefore, the faculty members need to work together to design innovative courses/curricula which can help placing students in academics and industries.

- 3. Intellectual right protection and abiding ethical values of scientific research
 - Growing cases of plagiarism and copyright violations are a challenge for scientists in all disciplines. In interdisciplinary research, it is a very big challenge to maintain ethical values and clearances from competent authorities because of the interface with life science.
- 4. Maintenance of safety measures in research involving hazardous and harmful materials
 Researches in interdisciplinary sciences require maintaining safety levels to avoid danger to the scientists and to other human beings. For example, drug development based on nanomaterials requires a lot of safety measures, clearances and approvals before it is brought to the market due

to inherent material toxicity and disposal issues.

- 5. Establishment of state of the art Animal House facility
 In research where animal handling is required, erecting and maintaining state of the art animal house facility is a must, which is a challenge in itself as the research outcome will be based on the animal health and the conditions therein.
- 6. Facility for establishment of Radioactivity materials and clearance from concerned authorities. Research related to radiation based studies requires clearance from concerned authorities which has strict rules and regulation in handling and disposing of such materials.

Annexure ERD-II

Seminars/conferences/workshops/symposia attended by faculty members

Professor Faizan Ahmad

- 1. Foundation Day Symposium of the Interdisciplinary Biotechnology Unit, Aligarh, January 16, 2008.
- 2. The National Symposium on Cellular & Molecular Biophysics, held at CCMB, Hyderabad during January 22-24, 2009.
- 3. The BIF Training Programme, held at the Department of Computer Science, JMI, New Delhi 19-20 February, 2009.
- 4. The National Conference "BIOGENESIS II Future Challenges & Opportunities" held at IILM Academy of Higher Learning, Greater NOIDA, UP, during February, 27 & 28, 2009.
- 5. The 7th annual research festival, Biosparks 2009 held at the School of Life Sciences, JNU, New Delhi during March 6 & 7, 2009.
- 6. Guha Research Conference, December 19-23, 2009, Ullal, Mangalore.
- 7. The National Symposium on Cellular & Molecular Biophysics, January 22-24, 2009, CCMB, Hyderabad.
- 8. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 9. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.

Professor M. A. Khan

- 10. Symposium on Mathematical Modeling in Engineering and Biosciences (2008), Agra, India (January, 10-13, 2008).
- 11. Ist International conference of Gwalior Academy of Mathematical Sciences (GAMS) with Symposium on Mathematical Modeling in Engineering and Biosciences (2008), Agra, India.
- 12. International Conference on "Recent Trends in Mathematics and its Applications" (ICRTMA-09) during March 30-31, 2009 at Department of Mathematics, Jamia Millia Islamia, New Delhi, India.
- 13. National Science Day (March 07, 2009) at I.I.T. Delhi, Organized by INSA, New Delhi, India.
- 14. Bioinformatics Application in Research and development organized by Bioinformatics Infrastructure Facility, Department of Computer Science, Jamia Millia Islamia, New Delhi, India (Feb. 19-20, 2009).
- 15. National conference on "Recent developments in Science and Technology" during Feb. 15-16, 2009, at S.V. College, Aligarh, UP.
- 16. International Conference on Ring and Module theory Hacettepe University, Ankara, Turkey (August 18-22, 2008).
- 17. 23rd Annual conference of Ramanujan Mathematical Society (RMS), Indian Institute of Technology, Kanpur, India (May 19-21, 2008).

- 18. National Seminar on Current Trends in Mathematics with Special Focus on Operations Research and Computers, October 22-31, 2009, Department of Mathematics & Statistics, Dr. Ram Manohar Lohia Avadh University, Faizabad.
- 19. National Conference on Mathematics and its Applications in Computer Sciences, January 22-23, 2010, Department of Mathematics, S.V. College, Aligarh.
- 20. Second National Symposium on Modern Trends in Differential Geometry and Mathematical Modeling in Bio sciences, January 9-10, 2010, University of Lucknow, Lucknow.
- 21. International Conference on Recent Trends in Mathematics & its Applications (ICRTMA), March 30-31, 2009, Jamia Millia Islamia, New Delhi.
- 22. National Workshop Cum Training Program on Dynamical Systems: Analysis and Applications (NWCTP-DSAA) BHU, Varanasi, U.P., Oct. 22-31, 2009.

Dr. Zubaida Ansari

- 23. APAM General assembly and Conference "State of materials research and new trends in material science", NPL, Delhi, India, 18-20 November 2008
- 24. National Seminar on Condensed Matter, High Energy and Nuclear Physics, March 23-24, 2009, Department of Physics, Jamia Millia Islamia.
- 25. 15th International Workshop on the Physics of Semiconductor Devices, December 14-20, 2009, Department of Physics, Jamia Millia Islamia, New Delhi.
- 26. International conference on NC-AFM 2010, Kanazawa, July 31- Aug. 5, 2010.
- 27. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 28. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 29. International Symposium on Physics and technology of sensors, Pune University, 8-10, March, 2012.
- 30. National symposium on Nanobiotechnology, IIT Mandi, 1-2 June 2012.
- Dr. Shafeeque Ahmed Ansari
- 31. Seminar on Developments in Materials, Theoretical and High Energy Physics, February 19-20, 2010, Department of Physics, Jamia Millia Islamia, New Delhi.
- 32. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 33. National seminar on Interdisciplinary Applications of Nanotechnology, 24-25/01/20111, S P H College, Malegaon, Maharashtra
- 34. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 35. International Symposium on Physics and technology of sensors, Pune University, 8-10, March, 2012.
- 36. National symposium on Nanobiotechnology, IIT Mandi, 1-2 June 2012.

Dr. Syed Nagui Kazim

37. National Science Day, Organized by: Ministry of Science & Technology, Govt. of India, Indian National Science Academy, and IIT Delhi, 28 Feb, 2009.

- 38. Molecular Diagnosis of Hepatitis Viruses on April 7, 2009 at the Institute of Liver and Biliary Sciences, New Delhi.
- 39. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 40. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 41. Interdisciplinary Science Conference on Protein Folding and Diseases, Jamia Millia Islamia, 8-10-December 2012
- 42. 17th National Seminar on Physics & Technology of sensor, Jamia Millia Islamia, 10-13 March 2013
- 43. National Conference on Recent Trends in Protein Structural Biology, Jamia Millia Islamia, December 16-18, 2013.

Dr. S. C. Thakur

- 44. International conference on "Bio-immunoregulatory mechanisms associated with reproductive organs: Relevance in fertility and in sexually transmitted infections" on February 2008 at National Institute of Immunology, New Delhi.
- 45. International Conference on Endocrinology and Reproduction: Molecular Mechanisms to Molecular Medicine and 28th Meeting on the Society for Reproduction Biology and Comparative Endocrinology, February 4-6, 2010, New Delhi.
- 46. International Conference on Reproductive Health and 20th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility, February 8-10, 2010, Jaipur.
- 47. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 48. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 49. International Interdisciplinary Sciences Conference 2012. I-ISC on Protein folding and diseases Jamia Millia Islamia, New Delhi. 8-11 Dec 2012
- 50. International Conference on Reproductive Health with Emphasis on Strategies for Family Planning & 22nd Annual Meeting on ISSRF. Held from 19th-21st Feb, 2012, New Delhi.
- 51. International Interdisciplinary Sciences Conference 2012. I-ISC on Protein folding and diseases Jamia Millia Islamia, New Delhi. 11-13 March 2013
- 52. National conference on Recent Trends in Protein Structural Biology. Jamia Millia Islamia, New Delhi. 16-18 December 2013
- 53. National symposium on changing environment & lifestyle: Impact on reproductive health NSCEL-2013, AIIMS, New Delhi. 19-20 November 2013

Dr. Fareeda Athar

- 54. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 55. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 56. National Science Day at Indian Institute of Technology, IIT A joint venture of IIT, DST and INSA) on 28th February, 2009.

57. Conference on "Biotech 2012; Current Advances in Biotechnology and Medicine" held at Institute of Liver and Biliary Sciences, New Delhi, on 24th-25th Feb, 2012.

Dr. Shama Parveen

- 58. Conference on Human Viruses and Translational Medicine at National Institute of Immunology, New Delhi from 17th to 18th November 2008.
- 59. National Conference on Drug Discovery & Development, 2009" at University of Delhi, South Campus, New Delhi from 21st to 23rd January 2009.
- 60. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 61. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 62. Interdisciplinary Science Conference on Protein Folding and Diseases, Jamia Millia Islamia, 8-10-December 2012
- 63. 17th National Seminar on Physics & Technology of sensor, Jamia Millia Islamia, 10-13 March 2013
- 64. National Conference on Recent Trends in Protein Structural Biology, Jamia Millia Islamia, December 16-18, 2013.

Dr. R. K. Brojen Singh

- 65. Seminar on "Developments in Materials, High energy and Nuclear Physics" on 20-21 January, 2008, Jamia Millia Islamia.
- 66. Seminar on "Nano-materials and Devices" on 30th January, 2008, Jamia Millia Islamia.
- 67. Bioinformatics Applications in Systems Biology, March 3-4, 2010, Department of Computer Science, Jamia Millia Islamia, New Delhi.
- 68. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 69. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.

Dr. Asimul Islam

- 1. Natural Science Info Fest, conducted by Faculty of Natural Sciences, Jamia Millia Islamia on November 1, 2008.
- 2. Workshop on "Web 2.0 in Education", conducted by FTK Centre for Information and Technology, JMI on November 4, 2008
- 3. Interdisciplinary Science Conference-2008, Organized by Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, on December 4, 2008.
- 4. XXXII Indian Social Science Congress, Organized by Jamia Millia Islamia, 18-22, December, 2008.
- 5. Bioinformatics Application in Research and development organized by Bioinformatics Infrastructure Facility, Department of Computer Science, Jamia Millia Islamia, New Delhi, India, on February 19-20, 2009.
- 6. National Science Day, Organized by the Ministry of Science & Technology, Govt. of India, Indian National Science Academy, and IIT Delhi, on 28 February, 2009.

- 7. Interdisciplinary Science Conference 2009, Organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, on October 8, 2009.
- 8. Bioinformatics Applications in Systems Biology, Department of Computer Science, Jamia Millia Islamia, New Delhi, on March 3-4, 2010.
- 9. Regional Workshop-Writing an Effective Grant Proposal Organized by Department of Biotechnology, India Habitat Center, Lodhi Road, New Delhi, on March 16, 2010.
- 10. National Symposium on Healthy aging Organized by Centre for Physiotherapy & Rehabilitation Sciences, Jamia Millia Islamia, New Delhi, on 31st March 2010.
- 11. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, on Dec. 2-4, 2010, New Delhi, India.
- 12. Current Trends in Structural Biology'2011 Organized by Protein Structural Biology Lab, Department of Biophysics, all India Institute of Medical Sciences, New Delhi on 30 March 2011
- 13. International Conference & Exhibition on Proteomics & Bioinformatics conducted by Omics Publishing Group at Hyderabad from June 6-8, 2011
- 14. Accelerating Research and Academia in India: an Agilent Initiative, Senate Room, Hyatt Regency, Bhikaji Cama Place, New Delhi, Organised by Agilent Technologies on 20 September 2011.
- 15. Launch Ceremony of Merck Millipore India Innovation Award 2012, Nehru Place New Delhi, on September 26, 2011.
- 16. 1st Annual Conference on "Research Methodology & Art of Scientific Paper Writing", Organized by Indian Journal of Medical Specialities & Deptt. Of Medicines, MAMC, New Delhi, on October 9, 2011.
- 17. International Interdisciplinary Science Conference on Bioinformatics, Organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, from November 15-17, 2011.
- 18. Biotech 2012: Current Advances in Biotechnology and Medicine Organized by Institute of Liver and Biliary Sciences (ILBS) from 24-25 February 2012.
- 19. BIF 2012: Workshop on Bioinformatics Infrastructure and Frontiers, Organized by Department of Computer Sciences, Jamia Millia Islamia, New Delhi, from 13-14 March, 2012.
- 20. OSACC-2012: National Conference on Emerging Trends in Open Source Applications and Cloud Computing Organized by FTK-Centre for Information Technology, Jamia Millia Islamia, Jamia Nagar, New Delhi, on 15 March, 2012.
- 21. Current Trends in Structural Biology 2012 Organized by Protein Structural Biology Lab, Department of Biophysics, all India Institute of Medical Sciences, New Delhi on April 2, 2012.
- 22. International Symposium on Protein Folding and Dynamics at NCBS, Bangalore, from October 15-17, 2012.
- 23. International Interdisciplinary Science Conference-2012 on Protein Folding and Diseases, Organized by the Centre for Interdisciplinary Research in Basic Sciences, from December 8-10, 2012.

- 24. National Symposium on Frontiers of Biophysics, Biotechnology & Bioinformatics & 37th Annual Meeting of Indian Biophysical Society (IBS) at University of Mumbai, Mumbai, from January 13-16, 2013.
- 25. National Symposium on Molecular Architecture, Dynamics and Assembly in Living Systems (MADALS 2014) organized by Saha Institute of Nuclear Physics, Kolkata, from February 7-10, 2014.
- 26. National Seminar on Metal Toxicity and Oxidative Stress, Organized by Department of Biosciences, Jamia Millia Islamia, New Delhi, from September 23-24, 2014.

Dr. Romana Ishrat

- 27. International Conference on Data Management, Organized By: Institute of Management and Technology, Ghaziabad, 10 Feb, 2009
- 28. National Science Day, Organized By: Ministry of Science & Technology, Govt. of India, Indian National Science Academy, and IIT Delhi, 28 Feb, 2009.
- 29. Bioinformatics Applications in Systems Biology, March 3-4, 2010, Department of Computer Science, Jamia Millia Islamia, New Delhi.
- 30. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 31. Workshop on Computational approaches in Biological Data Mining, Unit of Simulation and Informatics, IARI. Funded by DBT, March 23-25, 2011
- 32. Seminar on MATLAB® and Simulink® for Engineering Education organized by The MathWorks Inc., August 18, 2011
- 33. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 34. Biotech 2012,"Current Advances in Biotechnology and Medicine, ILBS, New Delhi, 24-25 Feb,2012
- 35. BIOTIKOS 2012: "Biotechnology: Emerging Trends and Opportunities in India, TERI University, 15 March, 2012
- 36. National Conference on "New Trends in Bioinformatics, IIT Delhi, July 30-31, 2012,
- 37. Author Workshop by Springer and Ednaz, and Jawaharlal University, August 27, 2012
- 38. 17th National Seminar on Physics & Technology of sensor, Jamia Millia Islamia , 10-13 March 2013
- 39. 5thWorkshop on Bioinformatics and Molecular Modeling in Drug Design, University of Delhi, March 21-23, 2013,
- 40. International -Interdisciplinary Science Conference 2012 on Protein Folding and Diseases, Jamia Millia Islamia, December 16-18, 2013

Dr. Rajan Patel

- 41. Indo-Italian workshop on "Chemistry and Biology of antioxidants" on 16th November 2010, organized by Department of Chemistry, University of Delhi and Embassy of Italy, New Delhi.
- 42. Indo-Italian Seminar on "Green Chemistry and Natural Products" on 17th November 2010, organized by Department of Chemistry, University of Delhi and Embassy of Italy, New Delhi.

- 43. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 44. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 45. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 46. National Conference On Emerging Trends In Chemistry-Biology Interface (ETCBI-2011), Department of Chemistry, D.S.B. Campus, Kumaun University, Nainital November 3-5, 2011
- 47. International Conference on Chemistry and Materials Prospects and Perspective-2012, Department of Applied Chemistry & School of Physical Sciences, Babasaheb Bhimrao Ambedkar University Lucknow, December 14-16, 2012
- 48. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, December, 2012.
- 49. National Symposium On Frontier Of Biophysics, Biotechnology & Bioinformatics Department Of Biophysics & Center For Excellence In Basic Sciences, University Of Mumbai, January 13-16, 2013.

Dr. Md Imtaiyaz Hassan

- 50. Advances in Clinical Biochemistry-Biomarkers, Molecular Diagnosis (2008) at Aligarh Muslim University, Aligarh, India
- 51. Crystal structure ZAG-PIP complex reveals an MHC I like architecture. National Seminar on Crystallography (NSC-37) is being organized by Jadavpur University, Kolkata, during 6th 8th February, 2008.
- 52. Proteomic analysis of heparin binding proteins from human seminal plasma. Trends in Proteomics held at CCMB, Hyderabad on 17th February 2008.
- 53. Mathematical modeling: Real life problem and applications as a new approach for improving the profile of drugs. 13th Annual Conference of Gwalior Academy of Mathematical Science (GAMS) with Symposium on Mathematical Modeling in Engineering and Biosciences at Anand Engineering College Agra. January 10-13, 2008.
- 54. National Symposium and UPACBICON 2008, JNMC, AMU, Aligarh, U. P. India
- 55. Workshop on food adulteration (2010) at Al-flah school of Engineering and Technology, Dhauj, Faridabad, India
- 56. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 57. National symposium on Biomolecular drug targets (March 7-9, 2011), Aligarh Muslim University, Aligarh.
- 58. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 59. International Conference On "Nucleic Acids in Disease & Disorder organized by the IIT Delhi 2011 (New Delhi, India)
- 60. Annual Meeting of the Indian Biophysical Society held on January 19 21, 2012 at Madras University, Chennai.

- 61. 5th International Symposium on Recent Trends in Macromolecular Structure and Function (ISRTMSF-2012) on January 23 25, 2012 at Madras.
- 62. National Conference on "Biology and Bioinformatics of Economically Important Plant and microbes" (BBCon2012) at University of North Bengal, Siliguri on February 17-19, 2012.
- 63. National Symposium on Bimolecular Interaction and Drug Discovery & Workshop on Current Trends in Bioinformatics, Aligarh Muslim university, Aligarh on March 21-22, 2012
- 64. Protein Modeling and Drug Designing" from November 2-3, 2012 organized by Amity University, Haryana, Gurgaon, Manesar.
- 65. National Conference On Challenges and Opportunities in Life Sciences (COLS-2013) on February 8-9, organized by the Shivaji University, Kolhapur.
- 66. Biotikos 2013 is Current Challenges of Bioinformatics in Biotechnology. on 9-10th April 2013 Organized by Teri University, New Delhi
- 67. International Conference on "Emerging Trends in Biomarker Research Prospects & Challenges" September 13th and 14th, 2013 Organized by Jawaharlal Nehru Institute of Advanced Studies (JNIAS), Secunderabad.
- 68. National Seminar on "Plant Biotechnology: Challenges and Opportunities in 21st Century" to be held from March 3rd & 4th, 2014, Organized by the Jamia Hamdard, New Delhi
- 69. 9th International Symposium on Fuels and Lubricants organized by the Indian Oil Corporation Limited, R&D Centre Sector-13, Faridabad 121007, Haryana, India during 15-17 April 2014.
- 70. UGC (SAP) sponsored two day national seminar on "Metal Toxicity and Oxidative Stress". Inaugural session of seminar will be from 9.30 am-11.00 am on 23rdSeptember, 2014.
- 71. One day workshop on Carbon dioxide Utilization (CDU) at Indian Oil's corporate R&D centre, Faridabad on September 12, 2014
- 72. International Seminar on "New Frontiers in Biotechnology: Functional Genomics and Proteomics" 27Th -28th September 2014 Organizing by Department of Biotechnology, Invertis University, Bareilly
- 73. 42nd national seminar in crystallography and international workshop on application of x-ray diffraction for drug discovery, November 21-23, 2013, organized jointly by All India Institute of Medical Sciences, Jawaharlal Nehru University, National Institute of Immunology and Regional Centre for Biotechnology.

Mr. Ravins Dohare

- 74. Pre-ICM International Convention on Mathematical Sciences-2008 held at Conference Centre, University of Delhi, December 18-20, 2008.
- 75. ICRTMA-09 International Conference on Recent Trends in Mathematics and Its Applications held at Department of Mathematics, Jamia Millia Islamia, New Delhi, March 30-31, 2009.
- 76. NWCTP-DSAA National Work-Shop cum Training Program on Dynamical System: Analysis and Application, October 22-31, 2009, Department of Mathematics, Faculty of Science, Banaras Hindu University, Varanasi.
- 77. National Meet on History of Mathematics, January 7-9, 2010, University of Delhi, Delhi.
- 78. WMTCMA Workshop cum Training Programme on Modern Trends in Celestial Mechanics and Astronomy, March 17-19, 2010, University of Delhi, Delhi.

- 79. International Interdisciplinary Science Conference on Nanobiotechnology: An Interface between Physics and Biology, Dec. 2-4, 2010, New Delhi, India.
- 80. Faculty Development Program on "Innovation-Key of Success" held at Bangalore school of Business, Delhi Campus on 29th January 2011.
- 81. International Interdisciplinary Science Conference on Bioinformatics, Jamia Millia Islamia, 15-17 November, 2011.
- 82. 7th Dynamics Day Delhi 2011 held at School of Physical Science, Jawaharlal Nehru University, New Delhi on 13th December 2011.
- 83. BIF'12 "Workshop on BIOINFORMATICS INFRASTUCTURE & FRONTIERS" organized by Bioinformatics Infrastructure facility, Department of Computer Science, Jamia Millia Islamia (A Central University), New Delhi, March 13-14, 2012.
- 84. Author workshop "How to Write for and Get Published in Scientific Journals and Publish Manuscripts" conducted by Springer and Edanz along with the Jawarlal Nehru University Central Library at New Delhi on 27th August 2012.
- 85. 8th Dynamics Day Delhi 2012 held at Seminar Hall, Centre for Theoretical Physics organized by Centre for Interdisciplinary Research in Basic Science, Jamia Millia Islamia, New Delhi-25 on 8th November 2012.
- 86. Symposium on "Complex System: From Physics to Biology" held at Jawaharlal Nehru University, New Delhi, October 15-16, 2013.

Annexure ERD-IV student enrichment programmes

S. No.	Name of the workshop / Special	Name of the Expert	Year	Rem
	Lecture / Workshop Tutorial /			arks
1	Comsol Workshop	Industrial	04/03/2014	
		presentation/training		
2	"What We Knowand What We	Dr. Allen P. Minton	10/03/2014	
	Do Not Know About			
	Molecular Crowding "?			
3	"Challenges and Opportunities In	Dr. Shekhar C. Mande	21/04/2014	
	Life Sciences after M.Sc."			
4	Nanothechnology and Biophotonics	Dr. Indrajit Roy	22/07/2014	
	in Medicine			
5	"Advances in Chromatography:	Dr. Leonid Asnin	25/09/2014	
	Faster, better and more			
	informative"			
6	"CCN5/WISP-2 promotes growth	Dr. InamulHaque	25/09/2014	
	arrest of triple negative breast	1		
	cancer cells through accumulation			
	and trafficking of p27 Klip1 via			
	Skp2 and FOXO3a regulation"			
7	Hands on Training on ORIGIN	Industrial	21/11/2014	
	2015 (Graphing and Analysis) By	presentation/training -		
	OriginLab Corporation			
8	"NamoSIMS 50L, A State of Art	Mr. Philippe Saliot	20/11/2014	
	Technique & Revolution In			
	Analytical Intsumentation"			
9	IL-10 regulation in human visceral	Dr.NasimAkhtar Ansari,	October 5,	
	leismaniasis	Laboratory of Parasitic	2011	
		Diseases, NIAID, National		
		Institute of Health Maryland,		
		USA.		
10	Leukemia, Types, Signs and	Dr.SudhaSazawal,	May 3,	
	Symptoms, Causes, Diagnosis and	Scientist II	2011	
	about the Treatment: An Overview.	Leukemia Research Lab		
		(Room No 160)		
		Department of hematology		
		Institute Rotary Cancer		
		Hospital Building		
		All India Institute of Medical		
		Sciences		
		New Delhi - 110029, INDIA.		
11	Cytotoxic Effect of Metal and	Dr.RizwanWahab	April 21,	
	Metal Oxide Nanoparticles on	Assistant Professor in	2011	

	Myoblast (Cancer) Cells	Energy Materials and Surface Science Laboratory, Chonbuk National University, South Korea	
12	Chemistry of Nano-Structured Materials.	Dr.Tokeer Ahmad, Assistant Professor Nanochemistry Laboratory, Department of Chemistry, JamiaMilliaIslamia, New Delhi 110025, INDIA.	April 1, 2011
13	Analytical Supercritical Fluid System for Separation of Chiral and Achiral Compounds	Dr. Vikas Vohra Chromatography Division, Waters Indian Pvt. Ltd.	January 27, 2011
14	The potential of On-line UPLC-IMS_MS for Qualitative and Quantitative Protein Profiling in Complex Biological Samples	Dr.MarkAndrew McDowall Strategic Development Manager, Mass Spectroscopy, Waters Corporation.	January 27, 2011
15	Vacuolar Protein Sorting (VPS) Factors Are Required for Efficient Transcription Elongation in Budding Yeast Cells	Dr. Naseem A. Gaur NICHD, National Institute of Health, Bethesda, Maryland, USA	December 23, 2010
16	Introduction and Application of AFM	Dr. Prato Director, APE Research, Italy	November 26, 2010
17	Nanoscale Imaging and Manipulation using Scanning Probe Microscopy (SPM) based Instruments.	Prof. Masahiko Tomitori, School of Materials Science, Japan	December 24, 2009
18	Modeling Blood Flows with Applications to Clinical Medicine.	Professor GirijaJayaraman, Centre for Atmospheric Sciences, Indian Institute of Technology, New Delhi.	May 15, 2009
19	ATP Synthase: Its Role in Human Health and Disease.	Dr.Zulfiqar Ahmad, Assistant Professor, Department of Biological Sciences, East Tennessee State University, USA.	May 22, 2009
20	Linking Stress-Signaling and Glutathione-Metabolism.	Dr.SushmaYadav, Ph.D., Faculty Research Associate, Department of Chemistry and Biochemistry, University of Texas, USA.	July 6, 2009
21	Smart Biosensors based on Nano- structured Metal Oxides.	Dr. Ansari S.G., Research Professor, School of	April 23, 2009

22	Best Approximation and applications	Chemical Engineering, Chonbuk National University, Jeonju, Republic of Korea. Prof. S.P. Singh Maths. and Stat. Memorial University St. John's, Canada	February 29, 2008
23	Nanophotonics: walking beyond the classical limits of light	Dr.PrabhatVerma Department of Frontier Biosciences and Department of Applied Physics Osaka University Japan.	November 28, 2007
24	Nanostructured semiconducting metal oxides and their application to biotechnology	Dr. Ansari S.G. Visiting Scientist Thin film laboratory School of Chemical Engineering Chonbuk National University Korea.	November 11, 2007
25	Langmuir-Blodgett technique: a useful tool in nano technology research	Dr.Prabir Kumar Pal	September 10, 2007
26	Application of Physics in Plant Stress Physiology	Prof. Mohammad Kafi Department of Agronomy and Plant Breeding College of Agriculture Mashhad Ferdowsi University Iran.	August, 01, 2007