

Department of Biochemical Engineering and Biotechnology

Minutes of the meeting of
Departmental Research Committee (DRC)
(DRC-02/2014-2015)

December 09, 2014

The second meeting of *Departmental Research Committee* (DRC) for the academic session 2014-2015 was held on **Wednesday, December 03, 2014** at **11 AM** in the Committee Room (I-230) of the Department.

The following members were present:

Prof. Prashant Mishra (*Chairman*)
Prof. V.S. Bisaria
Prof. Saroj Mishra
Prof. T.R. Sreekrishnan
Prof. Atul Narang
Dr. Shilpi Sharma
Dr. Ritu Kulshreshtha
Dr. D. Sundar (*Convener*)

Item No. 1 - To confirm the minutes of the 1st meeting of the DRC for the session 2014-2015 (DRC-01/2014-2015) held on September 02, 2014.

The Minutes of the DRC meeting No. 1/2014-2015 were confirmed as circulated.

Item No. 2 - Matters arising out of the minutes of DRC-06/2013-2014.

None.

Item No. 3 - Request for deferral of oral comprehensive exam received from PhD student – Mr. Himanshu Singh (2012BEZ8189).

The Committee discussed and recommended the application to be forwarded to Dean (Academics).

(Action: Chairman DRC to forward the letter to Dean - Academics)

Item No. 4 - Request received from PhD student Mr. Jitendra Singh Verma (2012BEZ8551) for condoning the late registration in the current semester.

The Committee discussed and recommended the application to be forwarded to Dean (Academics) for reinstating the student's WBAMS account.

(Action: Chairman DRC to forward the letter to Dean - Academics)

Item No. 5 - A note received from 2013-entry MSR students regarding discontinuation of Assistantships granted to them.

The Chairman informed the Committee that he has already forwarded the grades to the PG section upon receiving the recommendations from the Supervisors. The Committee urged that SRCs should

monitor the progress of the MSR students based on the written report & presentation every semester and the Supervisors are required to forward the progress report of the MSR students to the BED800 course Coordinator at the end of each semester, with a recommendation for satisfactory 'X' grade or a 'U' grade for unsatisfactory progress, until the project work gets completed and thesis is submitted.

The SRC for two 2013-entry MSR students Mr. Deepak Tewari (2013BEY7502) and Mr. Kunal Gupta (2013BEY7505) was constituted by the DRC as given in **Annexure I**.

Item No. 6 - Applications received from PhD students - Mr. Satyendra Singh (2009BEZ8510) and Mr. S. Premnath (2010BEZ8764) for extension of Institute Assistantship beyond 4 years.

The Committee discussed and recommended the applications received from Mr. Satyendra Singh (2009BEZ8510) and Mr. S. Premnath (2010BEZ8764) to be forwarded to Dean (Academics).

(Action: Chairman DRC to forward the letters to Dean - Academics)

Item No. 7 - Application received from PhD student - Mr. Sunil Kumar (2011BEZ8480) requesting converting to Institute Assistantship upon expiry of his CSIR-SRF starting January 01, 2015.

The Committee discussed the application received from Mr. Sunil Kumar (2011BEZ8480) and as a special case, recommended the award of Institute Assistantship upon expiry of the CSIR-SRF that he is currently availing.

Since only a limited number of PhD Institute Assistantships is sanctioned to each department and to follow a uniform procedure for distribution among the departmental faculty, the Committee decided that henceforth, decision on such requests for availing Institute Assistantships at the expiry of other sources of Fellowship from students who are already enrolled in the PhD program, will be based on a detailed discussion and norms to be evolved by the DFB. The Committee urged to convene a DFB at an early date, to discuss this along with other norms for the entire PhD recruitment process.

(Action 1: Chairman DRC to forward the letter to Dean - Academics)

(Action 2: Head DBEB to convene a DFB at an early date)

Item No. 8 - Formation of Student's Research Committee (SRC) for the following students

PhD students

Sl.	Student	Entry Number	Supervisor
1	Manisha Lamba	2013BEZ7506	ZA
2	Sanjay Singh	2013BEZ7510	PM
3	Lovely	2014BEZ8002	AKS

MSR students

Sl.	Student	Entry Number	Supervisor
1	Ankita	2014BEY7502	RK
2	Tanaya Bagga	2014BEY7508	PS
3	Varsha Walvekar	2014BEY7525	SS

The Committee discussed and constituted the SRC for all the above students as given in **Annexure 1**. The proposed area of research of these MSR students as well as the two PhD students who converted to PhD from the MSR program, was approved by the Committee as given in **Annexure 2**.

The Committee noted that the SRC for six other 2014-entry MSR students are yet to be constituted. It was recommended that these Supervisors should initiate requests to DRC for constitution of SRC at an early date.

Item No. 9 - Request received from Dr. Ziauddin Ahammad for change of topic of MTP thesis allotted to dual degree student Mr. Ayush Praskah (2010BB50009).

The request of Dr. Ziauddin Ahammad was discussed and the new MTP project as given below was allotted to the student Mr. Ayush Prakash (2010BB50009).

Previously allotted MTP topic	Proposed MTP topic
Study the mechanical and biological properties of anaerobic bio-granules (Supervisors: Dr. Ziauddin Ahammad (DBEB) Dr. Deepak Kumar (ITMMEC))	Study on treatment efficacy of sponge reactors for treating fertilizer industry waste water. (Supervisor: Dr. Ziauddin Ahammad (DBEB))

Item No. 10 - Application received from dual degree student Mr. Spandan Madan (2010BB50040) for allotment of MTP project starting January 2015.

Based on the interest indicated by the student, the project allocation and evaluation committee was constituted as given below:

Sl.	Student	Project that is allocated	Evaluation Committee
1	Spandan Madan (2010BB50030)	Genomic data mining for ortholog identification	D. Sundar (Supervisor) Ritu Kulshreshtha (Expert)

Item No. 11 - Report on Comprehensive Examination and Approval of Research Plan of the following PhD students:

Sl.	Student	Entry Number	Supervisor(s)
1	Moolchand	2012BEZ8550	SM
2	Gautam Anand	2013BEZ8024	SS & VSB

The Plan of Work for Ph.D. submitted by the students mentioned in the table above were discussed, and based on the recommendations of respective SRC's, they were approved. The recommendation of the SRC to include Dr. D. Sundar as Co-Supervisor along with Prof. Saroj Mishra for the PhD thesis of Mr. Moolchand (2012BEZ8550) was discussed and approved.

(Action: Chairman DRC to forward the Form w/ enclosures to Dean - Academics)

Item No. 12 - Application for Ex-India Leave received from PhD students Ms. Manisha Lamba (2013BEZ7506) and Mr. Shashank P. Katiyar (2012BEZ8193).

The Committee ratified the Ex-India Leave approved by Chairman DRC to Ms. Manisha Lamba (2013BEZ7506) for advanced training at Newcastle University, UK during October 26, 2014 to November 11, 2014.

The Committee also approved the request for Ex-India leave to Mr. Shashank P. Katiyar (2012BEZ8193) for advanced training at National Institute of Advanced Industrial Science & Technology (AIST), Japan from January 05, 2015 to March 31, 2015. Since Shashank is receiving Assistantship from a sponsored project of Dr. D. Sundar, the Committee authorized Dr. Sundar to decide on the continuation of Assistantship for Shashank during the period of Ex-India leave, based on his contribution to the Sponsored Project when he is abroad.

(Action: Chairman DRC to forward Shashank's application to Dean - Academics)

Item No. 13 - Requests received for change of topic of PhD thesis allotted to 2014-July entry PhD students:

SI	Student	Supervisor(s)	Previously allotted PhD topic	Proposed PhD topic
(i)	Sanjay Kumar (2014BEZ8005)	AKS & TRS	Production of Biopolymers (PHB and its derivatives) from sulfite waste water	Scale up of PHB production using <i>Azohydromonas australica</i>
(ii)	Ankur Kumar (2014BEZ8001)	PS	Engineering of <i>Dibenzothiphene monooxygenase</i> (DszC) for enhanced substrate range and improved activity	Biocatalytic viscosity reduction of heavy crude oil <i>(Project with Manoj Upreti, IOC R&D)</i>
(iii)	Omkar Suhas Vinchure (2014BEZ8003)	RK	MicroRNA and AU rich element (ARE) deciphering the regulatory loop	Regulatory and Functional characterization of key miRNAs involved in glioblastoma pathogenesis <i>(new project being floated now)</i>
(iv)	Ria Banerjee (2014BEZ8004)	SS & SC	Microbial production of chitosanase for generation of biologically active chitosan-oligosaccharides	Biotic and abiotic factors affecting healthy adult Indian gut microflora <i>(new project being floated now)</i>

The Committee discussed and approved the change in PhD topics for the students Mr. Sanjay Kumar (2014BEZ8005) and Mr. Ankur Kumar (2014BEZ8001).

However, it was noted that the newly proposed PhD topics for Mr. Omkar Suhas Vinchure (2014BEZ8003) and Ms. Ria Banerjee (2014BEZ8004) were new projects and yet to be approved by the DRC. The Committee decided to circulate these two projects to the DRC members for their comments and if no comments are received within a week's time, it will be presumed that they have no comments to offer and they approve of the decision for change in PhD topic for these two students. The constitution of SRC for these two students was deferred for consideration at the next meeting.

Item No. 14 - Discussion on shortlisting criteria, date and mode of conduct of entrance test/interview for admission to PhD program (2014-2015, 2nd Semester).

The Chairman informed the committee about the schedule for PG admissions for 2014-2015, 2nd Semester. Dr. Sundar briefed the Committee on the number of PhD applications received and based on this data it was decided to hold an entrance test followed by personal interview on December 15, 2014 (Monday). The Chairman DRC will coordinate the setting of question paper, conduct of written examination and evaluation of answer scripts, along with other members of a Committee (Dr. D. Sundar, Dr. Ritu Kulshreshtha, Dr. Preeti Srivastava, Dr. Z. Ahammad and Dr. Ravi Elangovan). All the departmental faculty were requested to be available on December 15, 2014 (Monday) to participate in the conduct of entrance test and interview. The shortlisting criteria used for the 2014-2015 Semester 1 admission was approved by the Committee to be used again for admission this time and is given in **Annexure 3**.

The Committee observed that the entire PhD recruitment process needs a revamp and the different processes need a thorough discussion in the DFB, so that every faculty member's input is taken into account. Some of the areas of reform put forth by the Committee members include steps in the preparation for the recruitment process (shortlisting criteria, background degrees and disciplines of prospective students), conducting personal interviews (different sources of Assistantships, intake number, etc) and the norm to be followed for allotment of students to faculty members. The Committee also recommended that this discussion in a DFB should happen before the current PhD selections scheduled for December 15, 2014. The Committee urged the Chairman DRC (who is also the HOD) to convene a DFB at an early date, to discuss this and evolve suitable criteria from the current PhD selection onwards.

Action: Head, DBEB

Item No. 15 - Discussion on scheduling the written PhD Comprehensive Exam in January 2015.

It was decided to conduct the Ph.D Written Comprehensive Examination on January 27 and 28, 2015. Prof. A.K. Srivastava and Dr. Preeti Srivastava will coordinate the setting of question papers and conduct the examination.

Item No. 16 - A note received from Dr. Ravikrishnan Elangovan for including Prof. Sunil Nath as Co-Supervisor for the MSR thesis of Mr. Gaurav Malik (2014BEY7505).

The request received from Dr. Ravikrishnan Elangovan for including Prof. Sunil Nath as Co-Supervisor for the MSR project of Mr. Gaurav Malik (2014BEY7505) was discussed and approved.

Item No. 17 - A note received from Dr. Ravikrishnan Elangovan and Prof. Sunil Nath for inclusion of each other's names as Co-supervisors in their respective PhD projects, available for allotment in the future.

The requests received from Dr. Ravikrishnan Elangovan and Prof. Sunil Nath for including each other's names as Co-Supervisors in their previously approved DRC projects, was discussed and approved. An updated list of DRC approved Ph.D. projects as on date is appended to the end of the minutes (**Annexure 4**).

Item No. 18 - Project proposal titled ‘Model-based approach for optimizing recombinant protein synthesis in continuous cultures of *Pichia pastoris*’ submitted by Prof. Atul Narang for funding from DBT.

This item was not taken up as the Chairman informed the Committee that as per current practice (kindly refer to minutes of DRC meeting 05/2012-13), this project proposal would be circulated to the DRC members for their comments. If no comments are received within ten days, Chairman DRC may then forward it to IRD for onward transmission to the funding agency and this item will be ratified in the next DRC meeting.

Item No. 19 - Requests received for mentoring researchers by the departmental faculty:

SI	Candidate	Mentor	Proposed topic	Funding Agency / Scheme
(i)	Dr. Rachana Jain	SS	Effect of salt variation on microbial community and plant growth in Shambhar lake nearby terrestrial region.	CSIR - Research Associateship
(ii)	Dr. Manju Singh	DS	Investigating the ayurvedic medicinal plant <i>Boerhavia diffusa</i> as a therapeutic drug for treatment of jaundice	DST - Women Scientist Scheme
(iii)	Dr. Saima Sultana	ZAS	Synthesis and characterization of graphene-based polymer nanocomposites for wastewater remediation and energy generation	DST - FAST Scheme

The Committee discussed and approved the above projects to be forwarded to IRD for onward transmission to the funding agency. The Chairman informed that, in principle, we should encourage postdoctoral students for joining the department if their research interest and project is in line with the ongoing research area of concerned faculty members.

Item No. 20 - Application received from Mr. Raju Kumar, a former MSR student, for admission to PhD program in the department.

The Committee declined the request of Mr. Raju Kumar, a former MSR student of the Department, for direct admission to the PhD program. Since he has already graduated from the MSR program, the Committee recommended that he needs to apply for the PhD program afresh and his application will be considered along with other applications.

Item No. 21 - A note received from Dr. Shilpi Sharma for forwarding of her application for ‘UNESCO - MAB Young Scientists Award 2014’.

The Committee noted that Head the Department had already forwarded the application after getting the approval of the DFB.

Item No. 22 - Matters for information of the DRC.

- a) *Progress Report to be submitted by PhD students for Semester 1, 2014-2015 and award of grade for the course DTD899 (Doctoral Thesis).*

On the basis of the progress reports to be submitted by the PhD students by December 12, 2014 and on the recommendations to be given by respective supervisors, it was decided to award a satisfactory (X) grade or unsatisfactory (U) grade to the PhD students for the semester in DTD899 course. The Committee authorized the Chairman DRC to forward all the progress reports to the PG section.

- b) *Feedback on the meeting of Dean Academics with the DRC Chairmans and Convenors.*

Dr. Sundar briefed the members on the meeting convened by Dean Academics on September 23, 2014. It was informed that he has already emailed the deliberations of the meeting to the entire departmental faculty on the same day for their information and necessary implementation by the DRC when considering different matters.

Item No. 23 - Any other item with the permission of the Chair.

- a) *Synopsis of the thesis titled 'Engineering of laccase of Cyathus bulleri for decolorization of complex textile dyes' submitted by Ms. Tenzin Kenzom (2009BEZ8511)*

The Committee discussed and approved the synopsis submitted by Ms. Tenzin Kenzom (2009BEZ8511). The Committee also discussed and approved the panel of Examiners and authorized the Chairman to forward the same to Dean (Academics).

(Action: 1 Thesis Supervisor to send the following documents to the DRC Convener -

- (a) Filled-in form for PhD synopsis submission & Appointment of Examiners (b) 2 hard copies of the Synopsis and (c) soft copy of the Synopsis on CD and by email)*

(Action 2: Upon receipt of the above documents, Chairman DRC to forward it to Dean - Academics)

- b) *Report on Comprehensive Examination and Approval of Research Plan of the PhD student Ms. Sakshi Aggarwal (2013BEZ8027)*

The Plan of Work for Ph.D. submitted by the student Ms. Sakshi Aggarwal was discussed, and based on the recommendation of the SRC, it was approved.

(Action: Chairman DRC to forward the Form w/ enclosures to Dean - Academics)

- c) *A note was received from Prof. A.K. Srivastava for formation of SRC for Mr. Vishal Bhagat (2011BEY7510).*

The Committee discussed and constituted the SRC for Mr. Vishal Bhagat as given in **Annexure 1**.

- d) *Project proposal titled 'Genome wide analyses of the snoRNA expression profiles in glioblastoma and identification of their functional and regulatory domains' submitted by Dr. Ritu Kulshreshtha for funding from DBT.*

The Committee authorized the Chairman to forward the application to IRD for onward transmission to the funding agency, if no comments are received from the members within 10 days time and it will be ratified in the next DRC meeting.

- e) *Letter of Intent (LOI) titled 'Evaluation of MIR-210 as a novel hypoxia biomarker and therapeutic target in glioblastoma' submitted by Dr. Ritu Kulshreshtha for funding from ICMR.*

The Committee observed that the LOIs need not be routed through DRC for submission to the funding agency. However, upon acceptance of LOI, the full proposals need to be approved by DRC for consideration by the funding agency.

The meeting ended with a vote of thanks to the Chair.



D. SUNDAR
DRC Convener

Distribution

All DRC members and other DBEB Faculty (by email)

Cc: DRC File

Student's Research Committee (SRC) for MSR students

Student	Chairman, DRC or his nominee	One expert in the field from the Department	One Institute faculty expert, preferably in the concerned area, from outside the Department to which the student belongs	Supervisor (s)
Deepak Tewari (2013BEY7502)	Atul Narang	Ziauddin Ahammad	Anupam Shukla Dept. of Chem Engg IIT Delhi	GP Agarwal
Kunal Gupta (2013BEY7505)	Atul Narang	Ziauddin Ahammad	SN Naik CRDT, IIT Delhi	GP Agarwal
Ankita (2014BEY7502)	Prashant Mishra	D Sundar	Chinmoy S. Dey Kusuma School of Biological Sciences IIT Delhi	Ritu Kulshreshtha
Tanaya Bagga (2014BEY7508)	Saroj Mishra	Ritu Kulshreshtha	Biswajit Kundu Kusuma School of Biological Sciences IIT Delhi	Preeti Srivastava
Vishal Bhagat (2014BEY7510)	Atul Narang	Ziauddin Ahammad	Sunil K. Khare Dept of Chemistry IIT Delhi	AK Srivastava
Varsha Walvekar (2014BEY7525)	VS Bisaria	Preeti Srivastava	Anushree Malik CRDT, IIT Delhi	Shilpi Sharma

Student's Research Committee (SRC) for PhD students

Student	Chairman, DRC or his nominee	One expert in the field from the Department	One Institute faculty expert, preferably in the concerned area, from outside the Department to which the student belongs	Supervisor (s)
Manisha Lamba (2013BEZ7506)	Atul Narang	TR Sreekrishnan	Anushree Malik CRDT, IIT Delhi	Ziauddin Ahammad
Sanjay Singh (2013BEZ7510)	Saroj Mishra	Preeti Srivastava	Sunil K. Khare Dept of Chemistry IIT Delhi	Prashant Mishra
Lovely (2014BEZ8002)	Atul Narang	Ziauddin Ahammad	Sunil K. Khare Dept of Chemistry IIT Delhi	AK Srivastava
Sanjay Kumar (2014BEZ8005)	Atul Narang	Ziauddin Ahammad	Sunil K. Khare Dept of Chemistry IIT Delhi	AK Srivastava TR Sreekrishnan
Ankur Kumar (2014BEZ8001)	VS Bisaria	Saroj Mishra	Biswajit Kundu Kusuma School of Biological Sciences IIT Delhi	Preeti Srivastava Manoj Upreti (IOC R&D)

(Action: Respective Supervisors to send the filled-in form to Chairman DRC for forwarding to Dean Academics)

Proposed area of research for PhD students

Sl.	Student	Proposed area of research
1	Manish Lamba (2013BEZ7506)	Study of antibiotic resistance transmission and proliferation in Delhi and development of possible mitigation strategy
2	Sanjay Singh (2013BEZ7510)	Silver nanoparticles: preparation, assembly and conjugation with proteins for antimicrobial and analytical applications

Proposed area of research for MSR students

Sl.	Student	Proposed area of research
1	Ankita (2014BEY7502)	Generation of 3D tumor models and its applications
2	Tanaya Bagga (2014BEY7508)	Understanding the regulation of dsz operon
3	Vishal Bhagat (2014BEY7510)	Continuous production of Biopolymers (PHB and its derivatives) from by-product of biodiesel industry (glycerol) using high cell density cell culture
4	Varsha Walvekar (2014BEY7525)	Non Target effects of Pesticides

Admission to PhD Program in Department of Biochemical Engineering and Biotechnology

Short-listing criteria (2014-2015 Semester 2)

The candidates must have first class in all examinations starting from 10+2 up to the qualifying exam and they must meet the following criteria based on their qualifying exam degree.

Qualifying exam	Acceptable majors	General Category	OBC (Non-creamy layer)	SC/ST & PD
B. Tech.	Biochemical Engineering / Chemical Engineering / Biotechnology	(i) B.Tech 70% or 7.5/10 CGPA (ii) Valid JRF or GATE score of min. 600 in Life Sciences or Biotechnology or Chemical Engg.	(i) B.Tech 70% or 7.5/10 CGPA (ii) Valid JRF or GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg	(i) B.Tech 65% or 7.1/10 CGPA (ii) Valid JRF or GATE score of min. 500 in Life Sciences or Biotechnology or Chemical Engg.
M. Tech.	Biochemical Engineering / Chemical Engineering / Biotechnology/ Bioinformatics (with Biotech / Pharmaceutical Biotechnology in B.Tech/B.Pharm/ M.Sc.)	(i) M.Tech 70% or 7.5/10 CGPA (ii) GATE score not required	(i) M.Tech 70% or 7.5/10 CGPA (ii) GATE score not required	(i) M.Tech 60% or 6.75/10 CGPA (ii) GATE score not required
M. Sc.	Biotechnology / Life Sciences / Biochemistry/ Biophysics/Bioinformatics (with Biotech in B.Sc)/ Environmental Sci (with Biotechnology in B.Sc)/ Chemistry/ Biotechnology / Microbiology/ Genetics / Biosciences/ Botany (with Microbiology) / Zoology (with Microbiology)	(i) M.Sc. 60% or 6.75/10 CGPA (ii) GATE score 600 or valid JRF	(i) M.Sc. 60% or 6.75/10 CGPA (ii) GATE score 550 or valid JRF	(i) M.Sc. 55% or CGPA 6.25/10 (ii) GATE score 500 or valid JRF

For B.Tech graduates from IITs

In respect of B.Techs from IITs graduating with a CGPA of 8.0 or above, the requirement of qualification through a national examination is waived off.

For students from Centrally Funded Technical Institutions (CFTI)

Students from CFTIs (Centrally Funded Technical Institutions - IIT's, NIT's, IIIT's, etc) having CPI/CGPA 7.00 (at 10.00 scale) at the end of 3rd year are also eligible for admission to PhD. The requirement of qualification through a national examination is waived off.

For Part-Time and Sponsored (full-time) candidates

- All candidates should have a minimum experience of two years.
- The minimum qualification for these candidates is the same as for full-time candidates, except that the requirement for qualifying in a national examination is waived off.

PhD projects approved by DRC (as on Dec 03, 2014)

Annexure 4

Supervisor 1		Project Title	Supervisor 2
GP Agarwal	1	Protein transmission investigations through ultrafiltration for moderately high-pressure range (> 100 Kpa).	
	2	Production and purification of lipase using MF and UF membrane	Prashant Mishra
VS Bisaria	1	Improved production of malic acid by redirection of cellular metabolism in a suitable bacterial host	Preeti Srivastava
AK Srivastava	1	Mass production of bio/copolymer using <i>Azohydromonas australica</i> & <i>A. eutropha</i> in novel reactor configurations.	
	2	Continuous production of Biopolymers (PHB and its derivatives) from by-product of biodiesel industry (glycerol) using high cell density cell culture.	TR Sreekrishnan
	3	To study and establish optimum recovery protocol for PHB/Copolymers	TR Sreekrishnan
	4	Production of bioplomers (PHB and its derivates) from sulfite waste water	TR Sreekrishnan
TR Sreekrishnan	1	Production of Biopolymers (PHB and its derivatives) from molasses using <i>A. latus</i>	AK Srivastava
	2	Production of poly (3-hydroxybutyrate) PHB & its derivatives in different novel airlift bio-reactor configurations	AK Srivastava
Sunil Nath	1	Measurement of oxygen exchange by mass spectrometry for probing the mechanism of ATP synthesis by ATP synthase: A splendid molecular machine.	Ravikrishnan Elangovan
	2	Probing the mechanism of ATP synthesis	Ravikrishnan Elangovan
PK Roychoudhary	1	Process optimization for bioconversion of rice straw to ethanol	Prashant Mishra
Prashant Mishra	1	Silver nanoparticles: Preparation, Assembly and conjugation with proteins for antimicrobial and analytical applications	
Shilpi Sharma	1	Effect of application of bioinoculants and "bioirrigation" for sustainable mixed cropping of pigeon pea and finger millet on rhizospheric community	VS Bisaria
	2	Evaluation of microbial community structure and function in pesticide contaminated soil using molecular markers	
	3	Analysis of diversities of bacterial communities in the rhizospheres of economically important legumes using molecular microbiology	
Sundar D	1	A computational study to investigate protein aggregation	
Ritu Kulshreshtha	1	Investigating modulation of miRNA expression in the hypoxic stem cell niche	
	2	Evaluating therapeutic and prognostic potential of miR-191 in breast cancer	
Preeti Srivastava	1	Chromosome Segregation in <i>Rhodococcus erythropolis</i> PR4	
	2	Engineering of dibenzothiphene monooxygenase (DszC) for enhanced substrate range and improved activity	
Ravikrishnan Elangovan	1	Direct detection of Enteric Fever in Blood	Shalini Gupta (Chemical) Vivek Perumal (SBS)
	2	Study of Torque versus load in Bacterial flagellar Motor	Sunil Nath
	3	Study of switching in Bacterial Flagellar Motor under varying proton motive force	Sunil Nath
	4	High precision localization of elongated fluorescent objects	Sunil Nath
	5	Study of intra-head interaction in myosin II molecule in ensemble	Sunil Nath
Ziauddin Ahammad	1	Mapping of ARGs distribution in the river Yamuna (in Delhi) and upstream of river Ganges (Rishikesh-Haridwar) and development of possible mitigation strategy.	
	2	Efficiency comparison of conventional wastewater treatment systems in removing emerging pollutants	
	3	Study on antibiotic resistance transmission and proliferation in Delhi and development of possible mitigation strategy	
	4	Finding the link between metal pollution and antibiotic resistance	
	5	AD Doctor- development of process monitoring strategy for operating anaerobic digesters	