

TEACHER'S ACTIVITY REPORT 2016-2017.

FACULTY: Science **DEPARTMENT:** Zoology **IQAC ACTIVITY No:** SVC/2016-17/ZOO/MV/2

NAME OF THE ACTIVITY: Lab visit under Innovation project

DATE	FACULTY	DEPARTMENT/COMMITTEE	COORDINATOR NAME
21st October, 2016	Science	Zoology	Dr. P. S. Dhanaraj Dr. Mansi Verma Dr. P. Jayaraj Dr. Rajendra Phartyal
TIME	VENUE	NUMBER OF PARTICIPANTS	NATURE: Outdoor/Indoor
10:00 AM onwards	IMTECH, Chandigarh	17	Outdoor
SUPPORT/ASSISTANCE:	Delhi University Innovation Project SVC-301 and SVC-302		

BRIEF INFORMATION ABOUT THE ACTIVITY (CRITERION NO. - II, V, VII):

TOPIC/SUBJECT OF THE ACTIVITY	IMTECH tour and lab visit
OBJECTIVES	<ul style="list-style-type: none"> ➤ Discussion about isolation and documentation of microbes ➤ To understand the maintenance of Laminar safety cabinet ➤ Discussion about bacterial culture. streaking, DNA sequencing, preservation of culture for long term storage ➤ To learn about the functioning and application of various instruments such as biofermentors, liquid nitrogen tanks, centrifuge, PCR machine, laminar flow hood, cell separation system involved in formation & storage of microbial type culture collection. ➤ To visit MTCC culture collection which plays role in conservation of biological diversity, production of natural products (enzymes, valuable drugs and metabolites) for pharmaceutical, food and other applications.
METHODOLOGY	<p>Students of 2 innovation projects (SVC-301 and SVC-302) were taken to IMTECH Chandigarh for lab visit and culture maintenance facility. The following students join for the trip:</p> <p>From SVC-301</p> <ol style="list-style-type: none"> 1. Shradha Bhatnagar 2. Akansha Kashyap 3. Aakriti Aggarwal 4. Jyoti Bodwal

	5. Shivani Sukhralia 6. Shruthi Gopirajan A.T. 7. Manisha Bhardwaj 8. Aditi Sharma From SVC-302 9. Neelanjana ray 10. Kirtana Vasu 11. Reema 12. Dhulipeta Aishwarya 13. Charu Jain 14. Shreya Bhatnagar 15. Aanchal Trikhia 16. Kriti Negi 17. Mrigya Kaushik
OUTCOMES	At the end of the visit, all students had a thorough idea of various concepts, principles, method and application of various techniques explained to us and we hope to explore any relevant issue and its application in Genomics and CRDD. Such visits help students develop a research aptitude and encourage them to take up a career in research.

PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):

Notice & Letters	Student list of participation ✓	Activity report ✓	Photos ✓	Feedback form
Feedback analysis	News clip with details	Certificate	Any other	Manual

IQAC Document No:	Criterion No:	Metric No:
Departmental file no	IQAC file No;	

NAME OF TEACHER & SIGNATURE	NAME OF HEAD/ COMMITTEE INCHARGE & SIGNATURE	IQAC COORDINATOR (SEAL & SIGNATURE)
Dr. Mansi Verma Dr. P. Jayaraj Dr. Rajendra Phartyal	Dr. Mansi Verma Dr. P. Jayaraj Dr. Rajendra Phartyal	

For Reference

Criterion I	Curricular Aspects (planning & Implementation)	Criterion V	Student Support & Progression
Criterion II	Teaching Learning & Evaluation	Criterion VI	Governance
Criterion III	Research, Innovations & Extension	Criterion VII	Institutional Values & Best Practices
Criterion IV	Learning Resources and Infrastructure		

IMTECH TOUR AND LAB VISIT

Institute of Microbial Technology
(IMTECH)
Chandigarh

SVC-301 & SVC-302

Principal Investigators responsible for visit

1. Dr.P.S.Dhanraj
2. Dr.Mansi Verma
3. Dr. P. Jayaraj
4. Dr. Rajendra Phartyal

Students involved

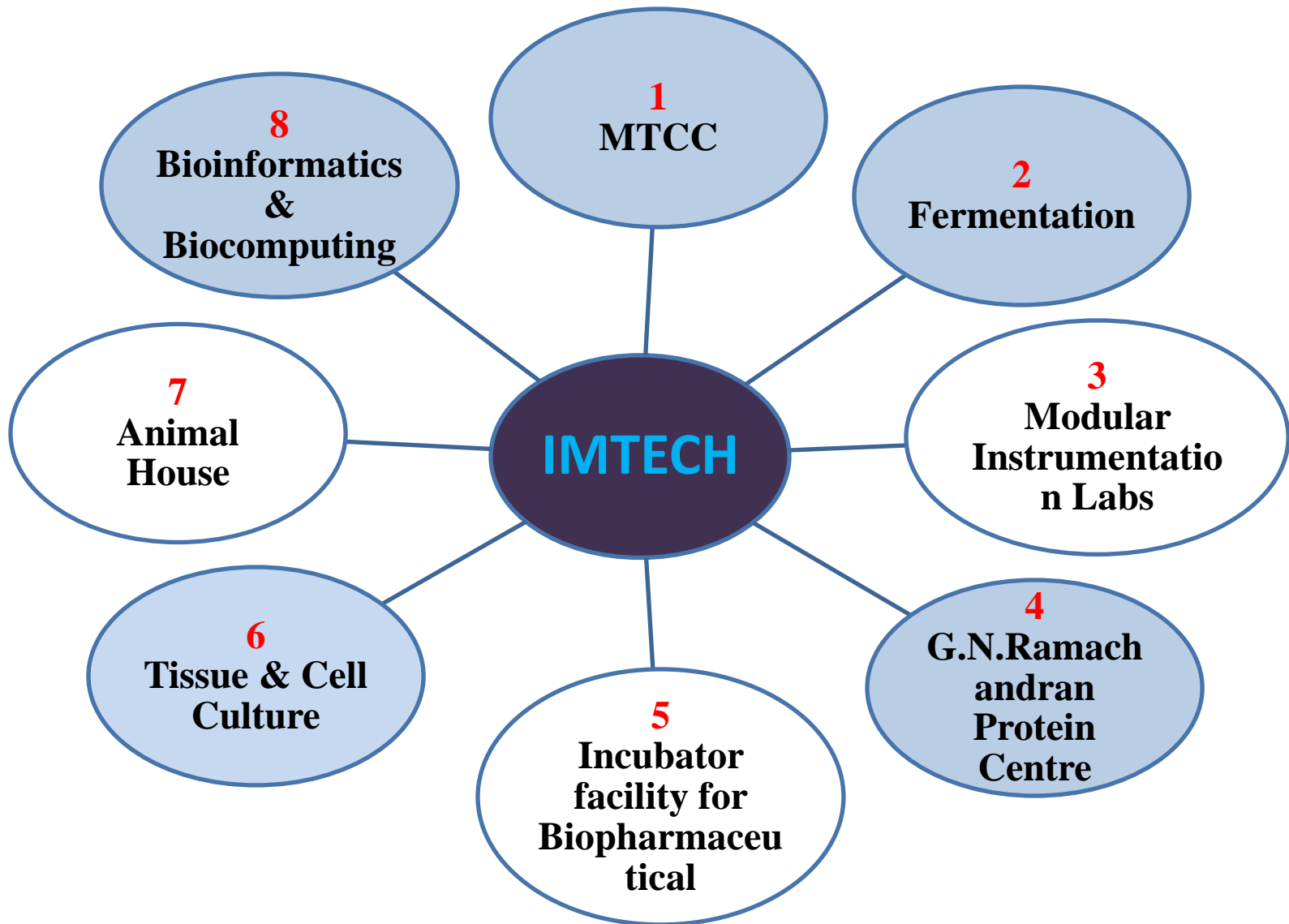
- **From SVC-301**
- Shradha Bhatnagar
- Akansha Kashyap
- Aakriti Aggarwal
- Jyoti Bodwal
- Shivani Sukhralia
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- Manisha Bhardwaj
- Aditi Sharma
- **From SVC-302**
- 9.Neelanjana ray
- 10.Kirtana Vasu
- 11.Reema
- 12.Dhulipeta Aishwarya
- 13.Charu Jain
- 14.Shreya Bhatnagar
- 15.Aanchal Trikha
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- 17. Mrigya Kaushik



IMTECH

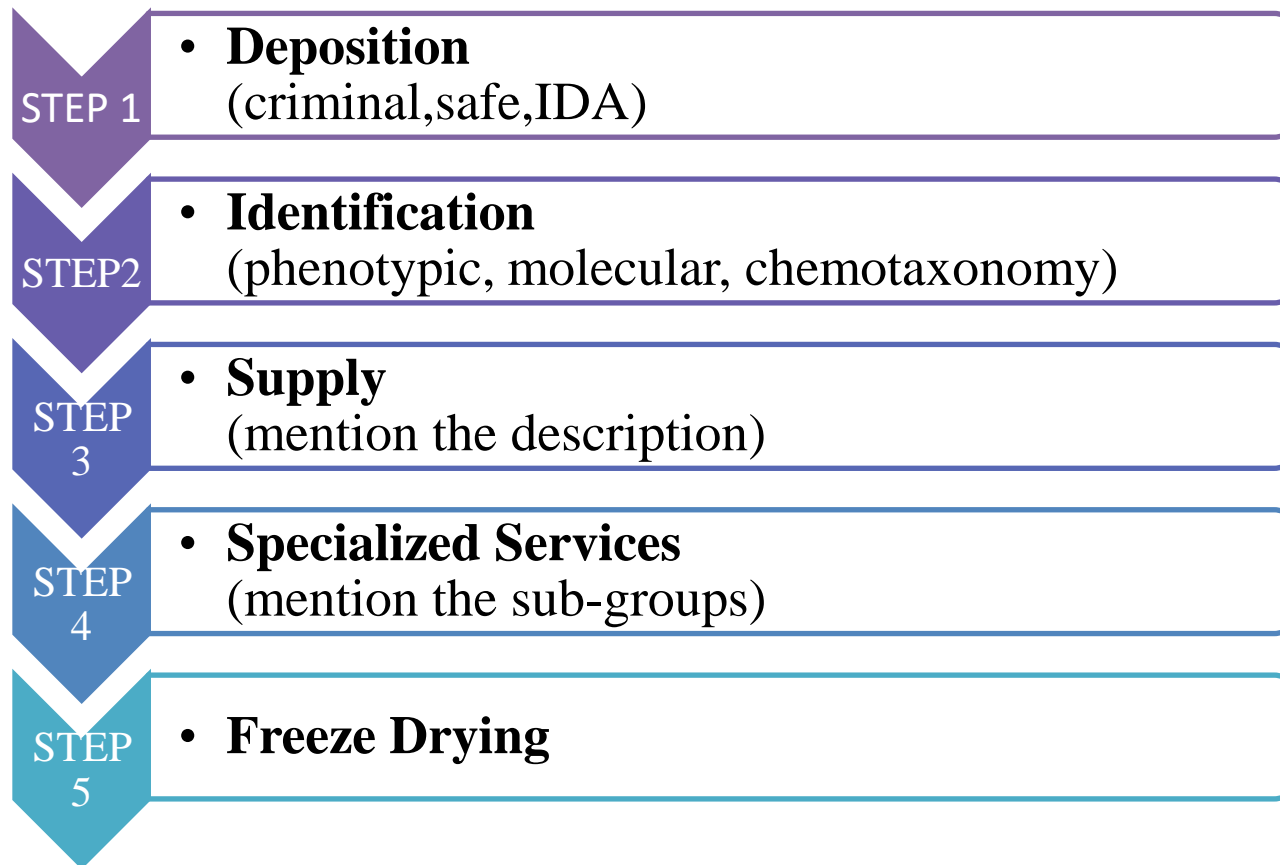
- Visit at INSTITUTE OF MICROBIAL TECHNOLOGY Chandigarh on 21st October, 2016.
- Established in 1984, is one amongst the 38 national labs of CSIR.
- Students interaction with scientists, research scholars and faculty.
- Exposure to the uses and functioning of various instruments and processes in microbial laboratories.
- Gained knowledge about research in the various disciplines related to molecular biology, microbial genetics, cell biology, immunology, bioinformatics & high end computational biology, protein science and engineering, fermentation technology and applied microbiology.
- Scientists at the institute expertise in the areas of :
Cloning and expression of recombinant/ engineered proteins, Protein structure determination through x-ray crystallography, Metagenomics, Bioinformatics, Immunology of infectious disease.

Laboratories at IMTECH



MTCC & Gene Bank

- Dr. Mani Shankar Bhattacharya explained processing of a microbial culture.



HIGHLIGHTS

- Discussion about isolation and documentation of microbes.
- In Service Lab 1 we were shown
 - Some petri-plate cultures –*Escherichia coli*,*Streptococcus pyogenes* etc.
 - Laminar safety cabinet
 - Discussion about bacterial culture. streaking, DNA sequencing, preservation of culture for long term storage
- Learned about the functioning and application of various instruments such as biofermentors, liquid nitrogen tanks, centrifuge, PCR machine, laminar flow hood, cell separation system involved in formation & storage of microbial type culture collection.
- MTCC plays role in conservation of biological diversity, production of natural products(enzymes, valuable drugs and metabolites) for pharmaceutical, food and other applications.

Students at fermentation facility at IMTECH

- A large work area having huge fermentors with stirrers, shakers & pipeline facility for cooling.
- Fermentors of capacities ranging from 2 to 1500 litres used for continuous and batch fermentation were shown.
- It also houses high capacity homogenisers, centrifugal separators, ultra filtration, rotary vacuum filter and spray drier, etc.





**Project students along with Mr. Kailash T. Bhamare
scientist at Tissue and Cell Culture Department**

G.N Ramachandran protein centre

GNRPC protein center provided the students knowledge about –

1. Use of super computers for storage of protein data bases
 - Sun Microsystems
 - HPA-850 Server
 - Network attached storage
 - OSAD Linux
2. The structure of proteins
2. Use of bioinformatics and computational biology and its application in proteomics, molecular biology, histology and immunochemistry



Cryopreservation & Cold Storage Facility

- Toured under expert guidance of another scientist Dr. Mani Shankar Bhattachayaya.
- We were shown various short term and long term storage techniques –
 1. Culture Storage Room (4°C)
 - Liophilised cultures shown
 - AKA (Ampoule Storage Facility) , best for transportation preservation
 2. Cryopreservation
 - Reliable mode of preservation
 - Storage in -196°C , liquid nitrogen
- Ultra low temperature freezers were shown
 - Modular atmospheric controlled system
- Liophilisation
 - Drying before storing sample (sublimation process)

Cold Storage Facility



Cold Storage Rooms



*Ultra low temperature
freezers*



Liquid nitrogen tank



Students at Facility for Tissue & Cell Culture



Biosafety level 3 (BSL3) laboratory facility

**IMTECH Work
Station**





Conclusion

At the end of the visit, all students had a thorough idea of various concepts, principles, method and application of various techniques explained to us and we hope to explore any relevant issue and its application in Genomics and CRDD. Such visits help students develop a research aptitude and encourage them to take up a carrier in research.

Extending special thanks to the Scientist in charge, CSIR-IMTECH for permitting and guiding us about the work carried out in their institute.



SRI VENKATESWARA COLLEGE
(University of Delhi)

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Principal
Sri Venkateswara College

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Department of Zoology

Dr. Shruti Mathur
Department of Commerce

Dr. Padma Priyadarshini
Department of Sociology

Dr. Nimisha Sinha
Department of Biochemistry

Shri D. Venkat Ramana
A.O (I/C)

This is to certify that the Activity report (Teacher/Department /Society/Association) has been submitted for documentation to IQAC, Sri Venkateswara College, University of Delhi.

N. Latha

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