

## CURRICULUM VITAE

### Name

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Dr. Princy Hira  
(Double Gold Medalist)

### Date & Place of birth

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13<sup>th</sup> May 1991, Faridabad, Haryana, India.

### Postal Details

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Address: 44C, P8, SRS City Royal Hills, Sector 87, Faridabad. (121002)  
Mobile: 9711070176  
Email: [princy.hira@gmail.com](mailto:princy.hira@gmail.com)

### Qualifications

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S. No	Qualification	Year	University/Institution	Remarks
1.	Ph.D. Zoology	2019 (Awarded)	Department of Zoology, University of Delhi	Comparative genomic analysis uncovers the genomic heterogeneity and distinctive plant growth promoting potential of <i>Pseudomonas fluorescens</i> and <i>Bradyrhizobium</i> sp.
2.	M. Sc. Zoology	2014	Department of Zoology, University of Delhi	83.5% ( <b>1<sup>st</sup> Rank in University of Delhi</b> )
3.	B. Sc (Hons) Zoology	2012	Sri Venkateswara College, University of Delhi	87.3% ( <b>1<sup>st</sup> Rank in University of Delhi</b> )
4.	AISSCE (XII)	2009	DAV Public School, Sector 14 Faridabad	95.5% ( <b>School Topper</b> )
5	AISSE (X)	2007	DAV Public School, Sector 14 Faridabad	91.6%

## Expertise and Technical Skills

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- Basic Techniques in Molecular Biology: Bacterial Culturing, DNA isolation, PCR, Genetic manipulation for generating rifamycin analogue.
- Extraction and Purification of secondary metabolites like rhamnolipids and rifamycin.
- Downstream processing: Liquid -Liquid extraction, HPLC, LC-MS, GC-MS, Column Chromatography.
- Bioinformatics analyses for Microbial Genomics and Comparative Genomics

## Awards and Honours

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1. **Smt. Usha Ganguly Gold Medal** for securing highest percentage of marks in M.Sc. Examination in Zoology, University of Delhi (2014)
2. **Gold Medal** by Hans Raj College for standing first in M.Sc. University Examination (2014)
3. **CSIR-JRF-All India Rank-16** (2013)
4. **UGC-JRF-All India Rank-67** (2013)
5. **PG Merit scholarship of University rank holders** (2012-2014)
6. **Dr. O.B. Tandon Memorial Gold Medal** by Sri Venkateswara College for securing 1<sup>st</sup> Rank in Delhi University in B.Sc. Zoology (2012)
7. **Gold Medal** by University of Delhi for securing 1<sup>st</sup> Rank in Delhi University in B.Sc. Zoology (2012)
8. **Balaji Merit Medal** by Sri Venkateswara College for securing 1<sup>st</sup> rank in Delhi University (2012)
9. **Balaji Gold Medal** by Sri Venkateswara College for securing 1<sup>st</sup> rank in Delhi University (2012)
10. **Bharatula Savitri Memorial Prize** by Sri Venkateswara College for securing 1<sup>st</sup> rank in Delhi University (2012)
11. **Mrs. P Gupta Memorial Prize** by Sri Venkateswara College for securing 1<sup>st</sup> rank in Delhi University (2012)
12. Stood 1<sup>st</sup> in District Level Science Quiz competition sponsored by Haryana State Council for Science and Technology Chandigarh, 2008

## Work Experience

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S. No.	Institution	Designation	Department	Year
1.	Maitreyi College, University of Delhi	Assistant Professor (Guest)	Zoology	November 22, 2021- present
2.	Phixgen Pvt. Ltd. BIRAC Project: “Upscaling.....Tuberculosis”	Research Associate	-	June 1, 2020- February 20, 2022

3.	Maitreyi College, University of Delhi	Assistant Professor (Guest)	Zoology	November 19, 2020- July 19, 2021
4.	Maitreyi College, University of Delhi	Assistant Professor (Guest)	Zoology	September 12, 2019- April 28, 2020
5.	Acharya Narendra Dev College, University of Delhi	Assistant Professor (Guest)	Zoology	August 25, 2019- September 11, 2019
6.	Department of Zoology (PG), University of Delhi	Assistant Professor (Guest)	Zoology	February 4, 2019-April 25, 2019
7.	Acharya Narendra Dev College, University of Delhi	Assistant Professor (Guest)	Zoology	January 15, 2019- April 25, 2019
8.	Kalindi College, University of Delhi	Assistant Professor (Guest)	Zoology	January 16, 2019- April 25, 2019
9.	Deen Dayal Upadhyaya College, University of Delhi	Assistant Professor (Guest)	Zoology	August 2, 2018- November 16, 2018

### Research Profile

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- Total number of publications: 15
- Total cumulative citation: 200
- h-index: 6
- Book chapters: 6

### Memberships and Position in National/International Committees

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1. 2021 onwards: Life Member, Association of Microbiologists of India (AMI).
2. 2018 onwards: Treasurer, Student Chapter, Indian Network for Soil Contamination Research (INSCR)
3. 2016-2018: Treasurer, Student Chapter, Indian Network for Soil Contamination Research (INSCR)
4. 2016 onwards: Lifetime Member, Indian Network for Soil Contamination Research (INSCR)

5. 2014-2017: Member, Association of Microbiologists of India (AMI)
6. 2014-2016: Member, American Society for Microbiology (ASM)

## **Publications**

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### **A. Research Publications**

1. Anand S, Lal S, Sood U, Gupta V, Dhingra GG, Solanki R, .....**Hira P**.....Lal R, Kalia VC. 2021. The Alphabet of the Elementary Microbiology: Revisited. *Indian J Microbiol* **61**: 397-400.
2. Sood U, Kumar R, **Hira P**. 2021. Expanding Culturomics from Gut to Extreme Environmental Settings. *Msystems* **6**: e00848-21
3. Dhingra GG, Saxena A, Nigam A, **Hira P**, Singhvi N, Anand S, Kaur J, Kaur J, et al. 2021. Microbial World: Recent Developments in Health, Agriculture and Environmental Sciences. *Indian J Microbiol* 1-5.
4. Singh P, **Hira P**, Rawat CD, Lal R, Sood U. 2021. Genome-based reclassification of *Amycolatopsis eurytherma* as a later heterotypic synonym of *Amycolatopsis thermoflava*. *Int J Syst Evol Microbiol* 71:004642.
5. Gupta V, Haider S, Verma M, Singhvi N, Ponnusamy K, Malik MZ, Verma H, Kumar R, Sood U, **Hira P**, Satija S et al. 2021. Comparative Genomics and Integrated Network Approach Unveiled Undirected Phylogeny Patterns, Co-mutational Hot Spots, Functional Cross Talk, and Regulatory Interactions in SARS-CoV-2. *mSystems* 6:e00030-21.
6. Kumar R, Verma H, Singhvi N, Sood U, Gupta V, Singh M, Kumari R, **Hira P**, Nagar S, et al. 2020. Comparative genomic analysis of rapidly evolving SARS-CoV-2 reveals mosaic pattern of phylogeographical distribution. *mSystems* **5**: e00505-20.
7. Sood U, Singh DN, **Hira P**, Lee JK, Kalia VC, Lal R, Shakarad M. 2020. Rapid and solitary production of mono-rhamnolipid biosurfactant and biofilm inhibiting pyocyanin by a taxonomic outlier *Pseudomonas aeruginosa* strain CR1. *J Biotechnol* **307**:98-106.
8. **Hira P**, Singh P, Pinnaka AK, Korpole S, Lal R. 2019. Taxonomically Characterized and Validated Bacterial Species Based on 16S rRNA Gene Sequences from India During the Last Decade. *Ind J Microbiol* **3**:1-8.
9. **Hira P**, Bajaj A, Puri A, Talwar C, Khurana H, Negi RK, Singh Y, Lal R, Shakarad M. 2019. Microbial genomics and metagenomics in India: Explorations and Perspectives. *PINSA* **85**: 999-1023.
10. Sood U, **Hira P**, Kumar R, Bajaj A, Rao DL, Lal R, Shakarad M. 2019. Comparative genomic analyses reveal core-genome-wide genes under positive selection and major regulatory hubs in outlier strains of *Pseudomonas aeruginosa*. *Front Microbiol* **10**.
11. Mahato NK, Gupta V, Singh P, Kumari R, Verma H, Tripathi C, Rani P, Sharma A, Singhvi N, Sood U, **Hira P** et al. 2017. Microbial taxonomy in the era of OMICS: application of DNA sequences, computational tools and techniques. *Antonie van Leeuwenhoek* **22**:1-5.

12. Kumari R, Kumar R, Singh P, Mukherjee U, Sood U, **Hira P**, Lal R. 2015. Comparative genomic analysis of genus *Amycolatopsis*: Revealing their phylogeny, functional attributes and potential to produce variety of secondary metabolites. *J Microb Biochem Technol* **4**:112.
13. Singh P, Kumari R, Mukherjee U, **Hira P**, Sood U, Lal R. 2015. Genetic Manipulation of Rifamycin Polyketide Biosynthetic Gene Cluster of *Amycolatopsis mediterranei* S699 for production of Rifamycin B analogs. *J Microb Biochem Technol* **4**:113.
14. Sharma A, **Hira P**, Shakarad M, Lal R. 2014. Draft genome sequence of *Cellulosimicrobium* sp. strain MM, isolated from arsenic-rich microbial mats of a Himalayan hot spring. *Genome announcements* **2**:e01020-14.

## B. Chapter In Books

1. **Hira P**, Sood U, Choksket S, Gundawar K, Korpole S, Lal S, Lal R. 2021. Genus *Mycoplana*, In *Bergey's Manual of Systematics of Archaea and Bacteria* (pp 1-16)
2. Sood U, **Hira P**, Singh P, Singh DN, Lal R. 2021. Genus *Sphingomonas*, In *Bergey's Manual of Systematics of Archaea and Bacteria* (pp 1-84).
3. Kumar R, Singh M, Talwar C, Nagar S, **Hira P**, Sood U, Mayanglambam R. 2019. Genetics and Evolution. A course material for M.Sc. Zoology, under Distance Education Programme for Lalit Narayan Mithila University, Darbhanga. Vikas Publishing House Pvt. Ltd. 1-152. (ISBN: 978-93-5338-906-2).
4. **Hira P**, Sood U, Gupta V, Nayyar N, Mahato NK, Singh Y, Lal R, Shakarad M. 2017. Human Microbiome: Implications on Health and Disease, In *Genome Analysis and Human Health*. Springer Singapore (pp. 153-168).
5. Anand S, Verma M, Mukherjee U, **Hira P**, Sood U. 2016. Introduction to biotechnology, In *An Introduction to Biotechnology: A genetic manipulation perspective*. I.K. International Publishing House Pvt. Ltd (pp. 1-51).
6. Dua A, Verma H, **Hira P**, Shakarad M. 2016. Visualization of nucleic acids and proteins, In *An Introduction to Biotechnology: A genetic manipulation perspective*. I.K. International Publishing House Pvt. Ltd (pp. 100-111).

## Training Courses/ International Conferences Organized and Attended

1. **2021**: Organizing Committee Member, Annual International Conference of Indian Network for Soil Contamination Research (INSCR) on “Microbes in Sustainable Development” in association with Department of Zoology (DU), Acharya Narendra Dev College (DU), Deen Dayal Upadhyaya College (DU), Gargi College (DU), Kirori Mal College (DU), PG Department of Zoology (MU), Maitreyi College (DU), Ramjas College (DU), Sri Venkateswara College (DU), C.M.P. College (AU), SGTB Khalsa College (DU), COCAS (PU) & PhiXgen Pvt. Ltd., Gurugram from November 15 to 18, 2021.
2. **2021**: Resource Person for Pre-conference workshop on “Hands on to Computational Biology for Genomics and Proteomics Analysis for Beginners” by Phixgen Pvt. Ltd. In association with

International Society for Microbial Ecology (ISME) during the 6<sup>th</sup> Annual International Conference of Indian Network for Soil Contamination Research (INSCR) on “Microbes in Sustainable Development” on November 14, 2021.

3. **2021:** Organizing Secretary of **Microsphere**: An international outreach program on the occasion of International Microorganism Day on 17<sup>th</sup> September, 2021 jointly organized by Deen Dayal Upadhyaya College (DU), Gargi College (DU), IIT Roorkee, Kirori Mal College (DU), Ramjas College (DU), PG Dept. of Zoology (MU) & Phixgen Pvt. Ltd.
4. **2021:** Resource Person for the 15 days Bioinformatics Workshop on Computational Biology for (Meta) genomics Analysis conducted by PhixGen Pvt. Ltd. From June 7, 2021 to June 26, 2021.
5. **2021:** Member, Organizing Committee for the National Webinar on “COVID-19 and Relevance of CT-Scan” organized by the Zoology Department, Maitreyi College, University of Delhi on May 23, 2021.
6. **2021:** Attended two week online workshop on “Tools and Techniques in Statistical Analysis” organized by Acharya Narendra Dev College, University of Delhi, under the aegis of DBT Star College Scheme from April 6-19, 2021.
7. **2021:** Co-Chair, during a session on “Translating Innovative Ideas to Enterprise” in Annual International Conference of The Association of Microbiologists of India (AMI) and Indian Network for Soil Contamination Research (INSCR) on “Microbial World: Recent Developments in Health, Agriculture & Environmental Sciences” on February 5, 2021.
8. **2021:** Member, Organizing Committee for the Annual International Conference of The Association of Microbiologists of India (AMI) and Indian Network for Soil Contamination Research (INSCR) on “Microbial World: Recent Developments in Health, Agriculture & Environmental Sciences” in association with The Energy and Resources Institute (TERI), Department of Zoology, UoD, Indian Agricultural Research Institute (IARI) & Indian National Science Academy (INSA) from February 3, 2021 to February 5, 2021.
9. **2021:** Organized and Resource Person for Pre-conference workshop on “Art of Scientific Writing and Communication” by Phixgen Pvt. Ltd. In association with American Society for Microbiology (ASM) during the 61<sup>st</sup> Annual International Conference on “Microbial World: Recent Developments in Health, Agriculture & Environmental Sciences” on February 2, 2021.
10. **2021:** Organized and Resource Person for Pre-conference workshop on “Hands on to Computational Biology for (Meta)Genomics Analysis” by Phixgen Pvt. Ltd. In association with International Society for Microbial Ecology (ISME) during the 61<sup>st</sup> Annual International Conference on “Microbial World: Recent Developments in Health, Agriculture & Environmental Sciences” on February 1-2, 2021.
11. **2021:** Member, Organizing Committee in online seminar on “Probing Genomes” associated with Genome ki Bhraman & Virtual lab Visit (an initiative of outreach activities of CSIR-IGIB) organized by the Zoology Department, Maitreyi College, University of Delhi on February 1 & 8, 2021.
12. **2021:** Member, Organizing Committee for certificate course for students on “ICT in Digital Learning and Data Management” organized by the Department of Zoology, under the aegis of Short Term Courses Committee, Maitreyi College, University of Delhi from January 11-February 20, 2021.
13. **2020:** Attended Faculty Development Program on “Digital Pedagogy to Enhance Teaching and Learning Experience” organized jointly by Guru Angad Dev Teaching Learning Centre,

SGTB Khalsa College and Maitreyi College, University of Delhi from December 15, 2020 – December 21, 2020.

14. **2020:** Attended one day workshop on ICT Enabled Enhanced Teaching and Learning (under the aegis of IQAC) organized by Maitreyi College through Google Meet on December 3, 2020.
15. **2020:** Resource Person in Add-on Course on Bioinformatics organized by Gargi College, University of Delhi from July 20, 2020- July 30, 2020.
16. **2020:** Attended e-conference on “Health and Research in Current Scenario: with Special Emphasis on Covid-19 Virus Genomics and Pathogenicity” organized by Sri Venkateswara College under the aegis of ISME from July 15, 2020-July 17, 2020.
17. **2020:** Resource Person for one day pre-conference workshop on “Health and Research in Current Scenario: with Special Emphasis on Covid-19 Virus Genomics and Pathogenicity” organized by Sri Venkateswara College under the aegis of ISME on July 14, 2020.
18. **2020:** Resource Person for ten days training program on “Role of Computational Biology in (Meta)Genomics” conducted by Phixgen Pvt. Ltd. from July 1, 2020-July 10, 2020.
19. **2020:** Resource Person for three weeks Academia-Industry Online Certificate Course in (Meta) genomics and Bioinformatics organized by Maitreyi College and PhixGen Pvt. Ltd on “Importance of Computational Biology in Genomics and Metagenomics” from June 27, 2020-July 16, 2020.
20. **2020:** Attended Faculty Development Program on “Inclusive Learning Environment” organized jointly by Inter University Centre for Disability Studies, Mahatma Gandhi University, Kerala and MES’s Pillai College of Education and Research, Chembur, Mumbai from June 10, 2020 - June 18, 2020.
21. **2020:** Resource Person in workshop for UG/PG students for three days on “Computational Biology for (Meta) Genomics Analysis” under INSA “Delhi local chapter’ for science week organized by Sri Venkateswara College, University of Delhi from 24<sup>th</sup>-26<sup>th</sup> February, 2020.
22. **2020:** Resource person in workshop "Computational Biology Workshop for (Meta) Genomics Analysis for Beginners" under INSA Delhi Local Chapter at Department of Zoology, University of Delhi held on February 19, 2020.
23. **2020:** Resource Person for pre-symposium workshop on “Computational Biology for (Meta) Genomics Analysis for Beginners” in Southeast Asian Regional Symposium on Microbial Ecology (SARSME-2020) organized by Tribhuvan University, Kathmandu, Nepal on 12<sup>th</sup> February 2020.
24. **2019:** Attended Faculty Development Program on “MOOCs and e-content Development” organized jointly by Internal Quality Assurance Cell (IQAC), Deen Dayal Upadhyaya College with SWAYAM, an initiative of MHRD and Consortium for Educational Communication (CEC) held from 13<sup>th</sup> -17<sup>th</sup> July, 2019.
25. **2019:** Resource Person for two week National Summer Training-cum-Workshop on “Fundamentals of Microbiology (BASIC)” organized by Department of Zoology, Deen Dayal Upadhyaya College under the aegis of DBT Star College Scheme at Deen Dayal Upadhyaya College, University of Delhi, from 27<sup>th</sup> June to 12<sup>th</sup> July, 2019.
26. **2019:** Organized Two-day workshop on “Hands-on to Computational Biology for (meta)genomic analysis” under the aegis of Department of Zoology and Department of Botany, Acharya Narendra Dev College under the aegis of DBT Star College Scheme from April 4-5, 2019 held at Web Centre, Acharya Narendra Dev College, University of Delhi.

27. **2018:** Resource Person for “Four day outreach program for class X students of Kendriya Vidyalaya, Sector 12, Dwarka” jointly organized by NASI-Delhi Chapter and Science Foundation, Deen Dayal Upadhyaya College under the aegis of DBT Star College Scheme at Deen Dayal Upadhyaya College, University of Delhi, from October 24-29, 2018.
28. **2018:** Organized Bani School Innovation Camp III (BaSIC II-2018) at Government Senior Secondary School (GSSS), Bani, Hamirpur (H.P.) under the aegis of INSA Outreach Program and DBT Star College Scheme, Deen Dayal Upadhyaya College on October 15, 2018.
29. **2018:** Resource Person for five days Hands on Workshop on “Basic Principles of Recombinant DNA Technology & Metagenomics” organized by Department of Zoology, Deen Dayal Upadhyaya College under the aegis of DBT Star College Scheme at Deen Dayal Upadhyaya College, University of Delhi, from August 28-September 1, 2018.
30. **2018:** Organized Bani School Innovation Camp II (BaSIC II-2018) at Government Senior Secondary School (GSSS), Bani, Hamirpur (H.P.) under the aegis of University of Delhi, INSA Outreach Program and DBT Star College Project, Ramjas College, on March 7, 2018.
31. **2017:** Organized a workshop on ““Hands on to Computational Biology for (Meta) Genomics Analysis” jointly organized under the aegis of Department of Environmental Studies and Department of Zoology at Department of Zoology University of Delhi on November 22, 2017.
32. **2017:** Organized ISME-AMI-INSCR Pre-conference workshop -2017 on “Hands on Computational Biology for (Meta) Genomics Analysis” under the aegis of Association of Microbiologists of India (AMI), Indian Network for Soil Contamination Research (INSCR), and International Society for Microbial Ecology (ISME) at Babasaheb Bhimrao Ambedkar University, Lucknow on November 16, 2017.
33. **2017:** Organized AMI-INSCR Workshop on “Beginner’s Computational Tools for Genome and Metagenome Analysis” under the aegis of Association of Microbiologists of India (AMI) and Indian Network for Soil Contamination Research (INSCR) at Department of Zoology University of Delhi on October 13, 2017.
34. **2017:** Organized INSCR International Conference 2017 (IIC-2017) on “Role of Microbe-Plant-Animal Interactions in Human Health” under the aegis of Department of Zoology University of Delhi, Indian Network for Soil Contamination Research (INSCR) and Amity University, Noida at Department of Zoology University of Delhi from September 26-28, 2017.
35. **2016:** Organized Bani School Innovation Camp (BaSIC)-2016 (Dream School) at Government Senior Secondary School (GSSS), Bani, Hamirpur (H.P.) under the aegis of University of Delhi, INSA Outreach Program and DBT Star College Project, Ramjas College, on December 23-24, 2016.
36. **2016:** Organized National Workshop on Microbial Genomics and Metagenomics at Department of Zoology, University of Delhi under the aegis of IUMS-INSA (International Union of Microbiological Societies-Indian National Science Academy), AMI Delhi Unit, University of Delhi and INSCR (Indian Network for Soil Contamination Research) on September 22, 2016.



37. **2015:** Organized National workshop on “Renovating Bacterial Taxonomy with Bioinformatics” at Department of Zoology, University of Delhi in collaboration with National Bureau of Agriculturally Important Microorganisms (NBAIM), Mau, Uttar Pradesh (May 14– May 15, 2015).

## **Presentations/Posters/Participations**

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### **A. Oral presentations**

1. “**Genus Mycoplana**” presented as Invited Lecture in Annual International Conference of The Association of Microbiologists of India (AMI) and Indian Network for Soil Contamination Research (INSCR) on “Microbial World: Recent Developments in Health, Agriculture & Environmental Sciences” in association with The Energy and Resources Institute (TERI), Department of Zoology, UoD, Indian Agricultural Research Institute (IARI) & Indian National Science Academy (INSA) from February 3, 2021 to February 5, 2021.
2. “**Core-Pan Genomics for Bacterial Evolution**” presented in workshop for UG/PG students for three days on “Computational Biology for (Meta) Genomics Analysis” under INSA “Delhi local chapter’ for science week organized by Sri Venkateswara College, University of Delhi on 5<sup>th</sup> March, 2020.
3. “**Comparative genomic analyses reveal acquisition and evolution of symbiosis island in native isolates of *Bradyrhizobium spp.***” presented at Southeast Asian Regional Symposium on Microbial Ecology (SARSME-2020) organized by Tribhuvan University, Kathmandu, Nepal on 14<sup>th</sup> February 2020.
4. “**Genome Validation and Annotation**” presented in pre-symposium workshop on “Computational Biology for (Meta) Genomics Analysis for Beginners” in Southeast Asian Regional Symposium on Microbial Ecology (SARSME-2020) organized by Tribhuvan University, Kathmandu, Nepal on 12th February 2020.
5. “**Make it rain indoors**” at Government Senior Secondary School (GSSS), Bani, Hamirpur (H.P.) (BaSIC III) under the aegis of INSA Outreach Program and DBT Star College Project, Deen Dayal Upadhyaya College, on October 15, 2018.
6. “**Evolution of nodulating capability of native isolates of *Bradyrhizobium sp.***” presented in Young Scientist Colloquium in INSCR International Conference 2018 on “Trends in Biotechnology for Innovations in Health & Environment” held at Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar on September 25, 2018.
7. “**Ligation of recombinant DNA molecules**” presented as guest lecture in five days Hands on Workshop on “Basic Principles of Recombinant DNA Technology & Metagenomics” organized by Department of Zoology, Deen Dayal Upadhyaya College under the aegis of DBT Star College Scheme at Deen Dayal Upadhyaya College, University of Delhi on August 30, 2018.

8. **“Phylogenetic Analysis using Phylophlan”** presented in workshop on “Hands on to Computational Biology for (Meta) Genomics Analysis” jointly organized under the aegis of Department of Environmental Studies and Department of Zoology at Department of Zoology University of Delhi on November 22, 2017.
9. **“Phylogenetic Analysis using Phylophlan”** presented in ISME-AMI-INSCR Pre-conference workshop -2017 on “Hands on Computational Biology for (Meta) Genomics Analysis” under the aegis of Association of Microbiologists of India (AMI), Indian Network for Soil Contamination Research (INSCR), and International Society for Microbial Ecology (ISME) at Babasaheb Bhimrao Ambedkar University, Lucknow on November 16, 2017.
10. **“Role of Type 6 secretion system in Plant growth promotion potential of *P. fluorescens*”** presented as student lecture in INSCR International Conference 2017 (IIC-2017) on “Role of Microbe-Plant-Animal Interactions in Human Health” under the aegis of Department of Zoology University of Delhi, Indian Network for Soil Contamination Research (INSCR) and Amity University, Noida at Department of Zoology University of Delhi from September 26-28, 2017.
11. **“Bacterial staining and Basic biology”** at Government Senior Secondary School (GSSS), Bani, Hamirpur (H.P.) under the aegis of University of Delhi, INSA Outreach Program and DBT Star College Project, Ramjas College, on December 23-24, 2016.
12. **“Functional Analysis of Genomes at pathway level”** presented in National workshop on “Renovating Bacterial Taxonomy with Bioinformatics” at Department of Zoology, University of Delhi in collaboration with National Bureau of Agriculturally Important Microorganisms (NBAIM), Mau, Uttar Pradesh (May 14– May 15, 2015).

#### **B. Poster Presentations**

1. **Hira, P.**, Sood, U., Lal, R., and Shakarad, M. “Plant growth promoting potential of *Pseudomonas fluorescens*: Plant Guardians”. Poster presented in the 58th Annual Conference of Association of Microbiologists of India (AMI) held at Babasaheb Bhimrao Ambedkar University, Lucknow, India from November 16-19, 2017.
2. **Hira, P.**, Rao, D. L. N., Lal, R. and Shakarad, M. "Comparative genomic study of *Pseudomonas fluorescens* : Insights into their heterogeneity and colonization strategies". Poster presented in the 57<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Gauhati University, Guwahati, India from November 24-27, 2016.
3. Singh, P., Kumari, R., Mukherjee, U., **Hira, P.**, Sood, U., and Lal, R. “Genetic manipulation of rifamycin polyketide biosynthetic gene cluster of *Amycolatopsis mediterranei* S699 for production of Rifamycin B analogs”. Poster presented in the World Congress and Expo on Applied Microbiology, held at Frankfurt, Germany from August 18-20, 2015.
4. Kumari, R., Kumar, R., Singh, P., Mukherjee, U., Sood, U., **Hira, P.**, and Lal, R “Comparative genomic analysis of genus *Amycolatopsis*: Revealing their phylogeny, functional attributes and

- potential to produce variety of secondary metabolites”. Poster presented in the World Congress and Expo on Applied Microbiology, held at Frankfurt, Germany from August 18-20, 2015.
5. Kumari, R., Singh, P., Kumar, R., Sood, U., **Hira, P.**, and Lal, R. “Comparative Genomic Analysis of genus *Amycolatopsis*: Revealing their Phylogeny, Functional Attributes and Potential to Produce Variety of Secondary Metabolites”. Poster presented in the 56<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Jawaharlal Nehru University, Delhi, India from December 7-10, 2015.
  6. Singh, P., Kumari, R., Saxena, A., **Hira, P.**, Sood, U., and Lal, R. “Genetic Manipulation of the Rifamycin B Polyketide Synthase gene cluster in *Amycolatopsis mediterranei* S699”. Poster presented in the 56<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Jawaharlal Nehru University, Delhi, India from December 7-10, 2015.
  7. **Hira, P.**, Rao, D. L. N., Lal, R., and Shakarad, M. “Complete genome sequence and analysis of *Pseudomonas fluorescens* PsChi, isolated from Chilli crop fields located at Lakhmipur, Assam”. Poster presented in the 56<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Jawaharlal Nehru University, Delhi, India from December 7-10, 2015.
  8. Singhvi, N., Puri, A., Kumari, R., Singh, P., Sood, U., **Hira, P.**, Saran, S., Saxena, R. K., and Lal, R. “Production of 24-desmethylrifamycin B from *Amycolatopsis mediterranei* mutant strain using fermentation”. Poster presented in the 56<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Jawaharlal Nehru University, Delhi, India from December 7-10, 2015.
  9. Gupta, V., Maji, A., Misra, R., Sharma, A., Mahato, N.K., Sood, U., **Hira, P.**, Sharma, E., Shakarad, M., Khurana, J.P., Lal, R., and Singh, Y. “Effects of DOTS regimens on gut microbiota of TB patient of Indian cohort: an insight to microbial interaction with disease and antibiotics”. Poster presented in the 55<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Tamil Nadu Agricultural University, Coimbatore, India from November 12-14, 2014.
  10. **Hira, P.**, Sharma, A., Shakarad, M., and Lal, R. “Draft genome sequence of *Cellulosimicrobium* sp. MM, isolated from Arsenic rich microbial mat of a Himalayan hot spring”. Poster presented in the 55<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI) held at Tamil Nadu Agricultural University, Coimbatore, India from November 12-14, 2014.