

Rahul Shrivastava, Ph.D

Associate Professor, Department of Biotechnology and Bioinformatics

Chief Warden, Jaypee University of Information Technology, Solan

Research Specialization:

Microbial Pathogenesis, Identification of Drug targets, Host-pathogen Interaction, Role of Biofilms in pathogenesis, Mycobacterial biofilms, Antimicrobial Screening, Drug Resistance



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Research Profile:

My research work is related to identification of new drug targets against *Mycobacterium tuberculosis*, a notorious infectious agent; and other fast growing, non-tubercular mycobacterial species. We have established a murine infection model showing persistence and reactivation, using a fast growing mycobacterial sps, *Mycobacterium fortuitum*. *In vitro* studies, immunoprofiling, histopathological studies and *in vivo* experiments have been used to validate it as a promising surrogate organism for studies related to *M. tuberculosis* persistence and infection. We have further worked to validate use of non-tubercular mycobacterial species as *in vitro* model organism using comparative genomics and mutation analysis.

We are working on host-pathogen interactions related to fast growing mycobacterial sps. Using random mutagenesis followed by their molecular, and bioinformatic analysis for identification of drug targets, inhibitors and interacting partners involved in virulence. Proteomic and genomic analysis approaches for identification of molecular targets specifically involved in biofilm formation also form part of my research interests.

Research interests of my group also include *in vitro* and *in vivo* drug screening of various plant species of Himalayan region, against different mycobacterial sps. aiming at identification of novel

inhibitor molecules. We are currently working on mycobacterial biofilm formation, assay development, global proteome and genomic analysis for identification of biofilm associated drug targets.

Educational Qualification:

Ph.d. Microbiology – 2009

Thesis title: ***Identification of Mycobacterial Regulatory Sequences affecting Virulence.***

Institution: Division of Microbiology, Central Drug Research Institute (CDRI), Lucknow (India).

Awarded by: Jawaharlal Nehru University (JNU), New Delhi, in Nov' 2009.

Post Graduation (M. Sc.): Microbiology - 2000

First Division with 71.92% marks - *Awarded by:* Pt. Ravishankar Shukla University, Raipur, India.

Graduation (B. Sc.): Microbiology, Botany, Chemistry – 1998

First Division with 77.5% marks - *Awarded by:* Pt. Ravishankar Shukla University, Raipur, India.

Job Profile:

Teaching Experience: (≈10 years, CSIR - NET Qualified)

- 1. Associate Professor** (: Jaypee University of Information Technology, Solan (H.P.) INDIA – Sep'2017 - Present
- 2. Assistant Professor (Senior Grade):** Jaypee University of Information Technology, Solan (H.P.) INDIA – Aug'2013 – Sep'2017
- 3. Assistant Professor (Grade –II):** Jaypee University of Information Technology, Solan (H.P.) INDIA – July' 2010 – July'2013
- 4. Assistant Professor (Grade –I):** Jaypee University of Information Technology, Solan (H.P.) INDIA – Jan'2010 - Jun'2010
- 5. Lecturer:** Janta College, Etawah, CSJM University, Kanpur, INDIA – Oct'2001 - May'2002

Industry Experience: (≈2 years)

Sr. Research Associate: Evalueserve.com Pvt. Ltd, Gurgaon, (Haryana) INDIA – Apr' 2008 – Jan' 2010.

Job profile included patent search and analysis using various patent databases, landscape mapping, freedom-to-operate studies, invalidation analysis etc.

Honours and Awards:

1. Session Chair, “2nd Emergent Converging Technologies and Biomedical Systems (ETBS 2022)” organized by Department of Electronics and Communication Engineering, Jaypee University of Information Technology (JUIT), Waknaghat, Solan, H.P., INDIA. 23-24 September 2022.
2. Session Chair, at International Conference on “Technological Intervention in Renewable Energy for Sustainable Environment (RESE-2021)” organized by Centre of Excellence in Sustainable Technologies for Rural Development [CESTRD], Department of Biotechnology and Bioinformatics, JUIT, Waknaghat, Solan (H.P.), India; 24 & 25 November 2021.
3. Session Chair, 6th International conference on “Signal Processing, Computing and Control (ISPCC-2k21)” organized by Department of Electronics and Communication Engineering, Jaypee University of Information Technology (JUIT), Waknaghat, Solan, H.P., INDIA. 7 - 9 October 2021.
4. External Expert for the Moderation of the Question papers for Microbiology and Biotech Programs, BSc, MSc Microbiology and B.Tech Biotech for the University of Petroleum and Energy Studies, Dehradun, Uttarakhand (Since 2020).
5. First position in Oral Presentation for Medical and Nanobiotechnology Session, at International Conference on Advances in Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India; 28th-30th January, 2021.
6. Session Chair, at International Conference on “Technologies for Environmental Sustainability and Smart Agriculture” organized by Centre of Excellence in Sustainable Technologies for Rural Development [CESTRD], Department of Biotechnology and Bioinformatics, JUIT, Waknaghat, Solan (H.P.), India; 18-19 September, 2020.

7. Expert Member for Board of Studies – Department of Biotechnology, G.B. Pant Engineering College, Pauri Garwal-246194 (Uttarakhand) for B.Tech/M.Tech Biotechnology courses. (Since 2019).
8. Out-of-turn promotion from Assistant Professor Grade –I to Grade –II (in five months) at Jaypee University of Information Technology, Solan (H.P.)
9. Senior Research Fellowship from Council of Scientific and Industrial Research (CSIR), New Delhi, Govt. of India (June, 2004 – June 2007) – *for pursuing Ph.D.*
10. Junior Research Fellowship from Council of Scientific and Industrial Research (CSIR), New Delhi, Govt. of India (June, 2002 – Mar 2004) – *for pursuing Ph.D.*
11. Qualified National Eligibility Test (CSIR-NET) for JRF and Lecturership – Thrice - 2002, 2001, & 2000.
12. Gold Medalist in Microbiology - Post Graduation (M.Sc.), June 2000.
13. First position in Merit for two consecutive years - 1999 & 2000.

Externally Funded Research / Consultancy Projects

S. No.	Title of Research Project/ Consultancy Work	Details of Sponsoring Agency	Duration, Sanction Date & Status	Amount Sanctioned	Chief or Co Investigator Specify
1.	Skill Vigyan Project	DBT, Govt. of India & HIMCOSTE, Shimla	3 Years (2021 – 2024)	49.8 Lakhs	Co Investigator
2.	Identification of Macrophage Invasion Protein(s) of Atypical Mycobacteria <i>M. fortuitum</i> as Potential Drug Target and Inhibitors Thereof	Department of Science and Technology (DST), Govt. of India	4 years, Jan 2013 – Jan 2017 (completed)	16.45 Lakhs	Principal Investigator
3.	Identification, characterization of diarrhoeagenic pathogens in Himachal Pradesh	Indian Council of Medical Research (ICMR), Govt. of India	3 years, Oct 2013 – Oct 2016 (completed)	16 Lakhs	Co Investigator
4.	Synthesis of Novel Poly-N Substituted Glycines (Peptoids) Based on Cell Selective Antimicrobial Peptides for Gram Negative and Gram Positive Bacterial Infections	Indian Council of Medical Research (ICMR), Govt. of India	3 years, Oct 2015 – Oct 2018 (ongoing)	24.30 Lakhs	Co Investigator

Publications

Journal Publications:

1. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2022). *Mycobacterium fortuitum* fabG4 knockdown studies: Implication as pellicle and biofilm specific drug target. *Journal of Basic Microbiology*. <https://doi.org/10.1002/jobm.202200230>.
2. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2022). Knockdown of the type-II fatty acid synthase gene hadC in *Mycobacterium fortuitum* does not affect its growth, biofilm formation, and survival under stress. *International Journal of Mycobacteriology*, 11 (2), 159-166.
3. Monika Choudhary, Shubham Kaushik, Arti Kapil, **Rahul Shrivastava**, Jitendraa Vashistt (2022). Decoding *Acinetobacter baumannii* biofilm dynamics and associated protein markers: proteomic and bioinformatics approach. *Archives of Microbiology*, 204 (4). doi.org/10.1007/s00203-022-02807-y.
4. Poonam Katoch, Shubham Mittal, Shivani Sood, **Rahul Shrivastava** (2021). Identification and in silico characterization of transcription termination/antitermination protein NusA of *Mycobacterium fortuitum*. *Biologia*, 76, 3855–3863. doi.org/10.1007/s11756-021-00903-w.
5. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2021). Response surface modeling integrated microtiter plate assay for *Mycobacterium fortuitum* biofilm quantification. *Biofouling* 37 (8), 830-843. doi: 10.1080/08927014.2021.1974846.
6. Pavan Kumar Agrawal, Pooja Upadhyay, **Rahul Shrivastava**, Swati Sharma, Vijay Kumar Garlapati (2021). Evaluation of the Ability of Endophytic Fungi from *Cupressus torulosa* to Decolorize Synthetic Textile Dyes. *Journal of Hazardous, Toxic, and Radioactive Waste*, 25 (1), 06020005.
7. Poonam Katoch, Kinam Gupta, Ragothaman M.Yennamalli, Jitendraa Vashistt, Gopal Singh Bisht, **Rahul Shrivastava** (2020). Random insertion transposon mutagenesis of *Mycobacterium fortuitum* identified mutant defective in biofilm formation. *Biochemical and Biophysical Research Communications*, 521 (4), 991-996.

8. Poonam Katoch, Gopal Singh Bisht, **Rahul Shrivastava** (2019). In vivo infection and In vitro stress survival studies of acid susceptible mutant of *Mycobacterium fortuitum*. *International Journal of Mycobacteriology*, 8 (4), 390-396.
9. Deepika Sharma, Monika Choudhary, Jitendraa Vashist, **Rahul Shrivastava**, Gopal Singh Bisht (2019). Cationic antimicrobial peptide and its poly-N-substituted glycine congener: Antibacterial and antibiofilm potential against *A. baumannii*. *Biochemical and Biophysical Research Communications*, 518 (3), 472-478.
10. Poonam, Raghu M. Yennamalli , Gopal Singh Bisht, **Rahul Shrivastava** (2019). Ribosomal maturation factor (RimP) is essential for survival of nontuberculous mycobacteria *Mycobacterium fortuitum* under in vitro acidic stress conditions. *3 Biotech*, 9 (4), 127-137.
11. D. Sharma, Poonam, **Rahul Shrivastava**, and G. S. Bisht (2019). In Vitro Efficacy of Lipid Conjugated Peptidomimetics Against *Mycobacterium smegmatis*, *International Journal of Peptide Research and Therapeutics*, 2019. <https://doi.org/10.1007/s10989-019-09859-7>.
12. Nutan Thakur, Swapnil Jain, Harish Changotra, **Rahul Shrivastava**, Yashwant Kumar, Neelam Grover, Jitendraa Vashist (2018). Molecular characterization of diarrheagenic *Escherichia coli* pathotypes: Association of virulent genes, serogroups, and antibiotic resistance among moderate-to-severe diarrhea patients. *Journal of Clinical Laboratory Analysis*, 32 (5), e22388.
13. Thakur N, Harish Changotra, **Rahul Shrivastava**, Grover N, Jitendraa Vashist (2018). Estimation of *Vibrio* species incidences and antibiotic resistance in diarrhea patients. *Asian Journal of Pharmaceutical and Clinical Research*, 11 (1), 369-373.
14. Pooja Upadhyay, **Rahul Shrivastava**, Pavan Kumar Agrawal (2016). Bioprospecting and Biotechnological Applications of Fungal Laccase. *3 Biotech*, 6 (1), 1-15.
15. Shivani Sood, Satinder Kaur, **Rahul Shrivastava** (2016). A LacZ Reporter-based Strategy for Rapid Expression Analysis and Target Validation of *Mycobacterium Tuberculosis* Latent Infection Genes. *Current Microbiology*, 72 (2), 213-219.

16. Shivani Sood, Anant Yadav, **Rahul Shrivastava** (2016). Mycobacterium Aurum is Unable to Survive Mycobacterium Tuberculosis Latency Associated Stress Conditions: Implications as Non-suitable Model Organism. *Indian Journal of Microbiology*, 56 (2), 198-204.
17. Pavan Kumar Agrawal, Shruti Agrawal, **Rahul Shrivastava** (2015). Modern molecular approaches for analyzing microbial diversity from mushroom compost ecosystem. *3 Biotech*, 5(6), 853–866.
18. Rajinder S. Chauhan, S.K. Chanumolu, Chittaranjan Rout, **Rahul Shrivastava** (2014). Can mycobacterial genomics generate novel targets as speed-breakers against the race for drug resistance. *Current Pharmaceutical Design*, 20 (27), 4319-4345.
19. Anant Yadav, Shivani Sood, **Rahul Shrivastava** (2014). Promoter trap strategy for gene expression analysis under stress conditions of M. tuberculosis Latency. *BMC Infect Dis.* 14: (Suppl 3):O13. (Abstract)
20. **Rahul Shrivastava***, Vivek Kr. Kashyap*, Ravi Kr. Gupta*, , Brahm S. Srivastava, Ranjana Srivastava, Maloy Kumar Parai, Priyanka Singh, Saurav Bera and Gautam Panda (2012). In vivo activity of thiophene-containing trisubstituted methanes against acute and persistent infection of non-tubercular *Mycobacterium fortuitum* in a murine infection model, *Journal of Antimicrobial Chemotherapy*. 67(5), 188-97. * Equal Contribution.
21. **Rahul Shrivastava***, R. P.S. Parti,* A.R. Subramanian, Raja Roy, Brahm S. Srivastava and Ranjana Srivastava (2008). A transposon insertion mutant of *Mycobacterium fortuitum* attenuated in virulence and persistence in murine infection model that is complemented by Rv3291c of *Mycobacterium tuberculosis*. *Microbial Pathogenesis* 45, 370-376. * Equal Contribution.

Articles /Monographs /Technical Reports:

1. Mishra Mamta, **Rahul Shrivastava**, Sudhir Kumar (2014). Pop pills at will: Implications of self-medication. *Current Science*, 106 (1), 9.
2. Rahul Shrivastava. 'Industry Job or Career in Academics?....a self help article' BIOCHROME, Vol 2, Page 8-9, May 2017.
3. Rahul Shrivastava. 'Career Development' BIOCHROME, Vol 1, Page 8-9, May 2016.

Book Chapters:

1. Anamika Verma, Ayushi Sharma, Manoj Kumar, Saurabh Bansal, Rahul Shrivastava (2022). Techniques and challenges in studies related with human gut microbiome. In Gunjan Goel, Teresa Requena, Saurabh Bansal, Human-Gut Microbiome (pp. 37-57). : Elsevier. [ISBN : 978-0-323-91313-3].
2. Manoj Kumar, Ayushi Sharma, Anamika Verma, Rahul Shrivastava (2022). Emergence of antibiotic resistance in gut microbiota and its effect on human health. In Gunjan Goel, Teresa Requena, Saurabh Bansal, Human-Gut Microbiome (pp. 211-232). : Elsevier. [ISBN : 978-0-323-91313-3].
3. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2021). Next-Generation Omics Technologies to Explore Microbial Diversity. In Jay Shankar Singh, ShashankTiwari, Chhatarpal Singh, Anil Kumar Singh, Microbes in Land Use Change Management (pp. 541-563). Netherlands: Elsevier. [ISBN : 978-0-12-824448-7] .
4. Icxá Khandelwal, Aditi Sharma, Pavan Kumar Agrawal, **Rahul Shrivastava** (2019). Bioinformatics Database Resources. In Information Resources Management Association, Biotechnology: Concepts, Methodologies, Tools, and Applications (pp. 84-119). USA: IGI Global. [ISBN : 9781522589037] .

5. Pavan Kumar Agrawal, **Rahul Shrivastava**, Jyoti Verma (2019). Bioremediation Approaches for Degradation and Detoxification of Polycyclic Aromatic Hydrocarbons. In Ram Naresh Bharagava, Pankaj Chowdhary, *Emerging and Eco-Friendly Approaches for Waste Management* (pp. 99-119). Singapore: Springer. [ISBN: 978-981-10-8669-4].
6. Gopal Singh Bisht, Kinam Gupta, **Rahul Shrivastava** (2017). Factories for Antibody Generation. In Vipin Chandra Kalia, Adesh Kumar Saini, *Metabolic Engineering for Bioactive Compounds* (pp. 351-370). Singapore: Springer. [ISBN: 978-981-10-5511-9].
7. Poonam, Ritu Ghildiyal, Gopal Singh Bisht, **Rahul Shrivastava** (2017). Engineering Yeast as Cellular Factory. In Vipin Chandra Kalia, Adesh Kumar Saini, *Metabolic Engineering for Bioactive Compounds* (pp. 173-208). Singapore: Springer. [ISBN: 978-981-10-5511-9].
8. Deepika Sharma, **Rahul Shrivastava**, Gopal Singh Bisht (2017). Nanomaterial in Diverse Biological Application. In Vipin Chandra Kalia, Adesh Kumar Saini, *Metabolic Engineering for Bioactive Compounds* (pp. 293-317). Singapore: Springer. [ISBN: 978-981-10-5511-9].
9. Icxia Khandelwal, Aditi Sharma, Pavan Kumar Agrawal, **Rahul Shrivastava** (2017). Bioinformatics Database Resources. In Shri Ram, *Library and Information Services for Bioinformatics Education and Research* (1st. ed., pp. 45-90). : IGI Global. [ISBN: 9781522518716].
10. Pavan Kumar Agrawal, **Rahul Shrivastava** (2014). Molecular Markers. In Indu Ravi, Mamta Baunthiyal, Jyoti Saxena, *Advances in Biotechnology* (pp. 25-39). Netherlands: Springer. [ISBN: 978-81-322-1553-0].

International Conferences / Symposia Proceedings:

1. Janki Insan, **Rahul Shrivastava** (2022). Sex-Specific Transcriptomic Differences in Pulmonary Tuberculosis Patients. Proceedings of the International Conference on Advances in Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India : 20 -22 January, 2022], pp.52-52.
2. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2021). Global proteome analysis revealed metabolic remodeling during biofilm formation by *Mycobacterium fortuitum*. Proceedings of the 13th Annual Meeting of Proteomics Society, India and Virtual International Symposium on OMICS in Redefining Modern Biology (OMICS-2021). [Organized by: Proteomics Society of India (PSI) in collaboration with CSIR-Centre for Cellular and Molecular Biology (CCMB) & CCMB Science Foundation (CSF), India; 21-23 October].
3. Manoj Kumar, Ayushi Sharma, **Rahul Shrivastava** (2021). Anti-Microbial Resistance among Bacterial Pathogens and Novel Intervention Strategies to Tackle it. Proceedings of the International Conference on Recent Advances in Applied Science, Technology and Health (RASTH 2021) [SRM Institute of Science and Technology, Kattankulathur, India : 3-5 March 2021], pp.58-58.
4. **Rahul Shrivastava**, Poonam Katoch (2021). Random Insertion Transposon Mutagenesis of *Mycobacterium fortuitum* Identified role of Anthranilate Phosphoribosyl transferase (trpD) in Biofilm Formation and Hypoxic Stress Survival. Proceedings of the International Conference on Advances in Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India : 28th-30th January, 2021], pp.23-23.
5. Simran Gohan, **Rahul Shrivastava** (2021). Gene Therapy Strategies for Tackling Hutchinson-Gilford Progeria. Proceedings of the International Conference on Advances in Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India: 28th-30th January, 2021], pp.12-12.
6. Nayanika Sharma, Pranjal Bhatia, **Rahul Shrivastava** (2021). Big Data Analysis of Alzheimer's Disease for Early Prediction. Proceedings of the International Conference on Advances in

Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India : 28th-30th January, 2021], pp.80-80.

7. **Ayushi Sharma**, Jitendraa Vashistt, Gopal Singh Bisht, Rahul Shrivastava (2020). Systems biology approach for screening drug targets from mycobacterial proteomes. Proceedings of the International Conference on Frontiers in Biochemistry and Biotechnology: Strategies to Combat Human Diseases. [Organized by: Department of Biochemistry (Shivaji College) and South Campus (University of Delhi), New Delhi, India; 12-13 February].
8. Ayushi Sharma, Jitendraa Vashistt, Gopal Singh Bisht, **Rahul Shrivastava** (2019). High throughput screening of *Mycobacterium fortuitum* proteome for discovery of novel drug targets. Proceedings of the International Conference on Recent Advances in Agricultural, Environmental and Applied Sciences for Global Development (RAAEASGD-2019) [2nd : Dr. Y.S. Parmar University of Horticulture and Forestry, Solan, India : 27-29 September, 2019], pp.51-51.
9. Shivani Sood, Varun Jaiswal, Poonam Katoch, **Rahul Shrivastava** (2019). Acid stress based *Mycobacterium fortuitum* surrogate model for *Mycobacterium tuberculosis* persistent infection. Proceedings of the Annual Conference of Association of Microbiologists of India (AMI) & International Symposium on Microbial Technologies in Sustainable Development of Energy, Environment, Agriculture and Health [60th : Central University of Haryana, Mahendergarh, India : 15-18 November, 2019], pp.319-319.
10. Ayushi Sharma, Poonam, Jitendraa Vashistt, Gopal Singh Bisht, **Rahul Shrivastava** (2019). Identification and in-silico structure modeling of *Mycobacterium fortuitum* homolog of *Mycobacterium tuberculosis* lipaseU. Proceedings of the International Conference on Recent Trends in Biotechnology and Bioinformatics (ICBAB-2019) [Jaypee University of Information Technology, Solan, India : 01-03 August, 2019].
11. Monika Choudhary, Deepika Sharma, Gopal Singh Bisht, **Rahul Shrivastava**, Jitendraa Vashistt (2019). Antimicrobial potential of quercetin and curcumin against antibiotic resistant strains of *Acinetobacter baumannii*. Proceedings of the International Conference on Recent Trends in

Biotechnology and Bioinformatics (ICBAB-2019) [Jaypee University of Information Technology, Solan, India : 01-03 August, 2019].

12. Lalita Sharma, **Rahul Shrivastava**, Gopal Singh Bisht (2019). Synthesis, characterisation and evaluation of antibacterial activity of a 12 residue peptide A-12. Proceedings of the International Conference on Recent Trends in Biotechnology and Bioinformatics (ICBAB-2019) [Jaypee University of Information Technology, Solan, India : 01-03 August, 2019].
13. Saesha Verma, Ayushi Sharma, Gopal Singh Bisht, **Rahul Shrivastava** (2018). To Determine Anti-Mycobacterial Properties of Valeriana jatamansi and Its Prospective role as a Future Nutraceutical. *Proceedings of the International Conference on Nutraceuticals and Chronic Diseases (INCD-2018)* [3rd: Cancer Research Institute - Himalayan Institute of Medical Sciences, Rishikesh (Dehradun), Uttarakhand: 14-16 September, 2018].
14. Sophia Puri, Deepika Sharma, Gopal Singh Bisht, **Rahul Shrivastava** (2018). Therapeutic Activity of Valeriana jatamansi Plant Extract against Diarrheagenic Infections. *Proceedings of the International Conference on Nutraceuticals and Chronic Diseases (INCD-2018)* [3rd: Cancer Research Institute - Himalayan Institute of Medical Sciences, Rishikesh (Dehradun), Uttarakhand: 14-16 September, 2018].
15. **Rahul Shrivastava**, Shivani Sood, Gopal Singh Bisht (2018). An in Vitro Model for Mycobacterium Tuberculosis Persistent Infection Drug Discovery Studies. *Proceedings of the International Conference on Advances in Biosciences and Biotechnology - ICABB-2018* [Jaypee Institute of Information Technology, Noida: 01-03 February, 2018].
16. Ayushi Sharma, Jitendraa Vashistt, **Rahul Shrivastava** (2018). Identification of Biofilm Associated Genes of Mycobacterium Species: a review of techniques and strategies. *Proceedings of the International Conference on Advances in Biosciences and Biotechnology (ICABB-2018)* [Jaypee Institute of Information Technology, Noida: 01-03 February, 2018].
17. Monika Choudhary, **Rahul Shrivastava**, Jitendraa Vashistt Identification of drug target for multidrug resistant biofilm forming Acinetobacter baumannii. *Proceedings of the International*

Conference on Advances in Biosciences and Biotechnology (ICABB-2018) [Jaypee Institute of Information Technology, Noida: 01-03 February, 2018].

18. Arpita Prasad, Rahul Pramjeet, Gopal Singh Bisht, **Rahul Shrivastava** (2017). In-Vitro studies of the Overexpressed Gene Isocitrate Lyase of Mycobacterium fortuitum under Stressed Conditions. *Proceedings of the Annual Conference of Association of Microbiologists of India and International Symposium on Microbes for Sustainable Development: Scope and Applications (MSDSA-2017)* [58th: Babasaheb Bhimrao Ambedkar University Lucknow, Uttar Pradesh, India: 16-19 November, 2017].
19. Divya, Anandita Govil, **Jitendraa Vashistt, Rahul Shrivastava** (2017). Identification and Construction of LipU Antisense Knockout Mutant of Mycobacterium fortuitum and its Potential Role in pathogenesis. *Proceedings of the Annual Conference of Association of microbiologist of India and International Symposium on Microbes for Sustainable Development: Scope and Applications (MSDSA-2017)* [58th: Babasaheb Bhimrao Ambedkar University Lucknow, Uttar Pradesh, India: 16-19 November, 2017].
20. Shubham Mittal, Poonam, **Rahul Shrivastava** (2017). Identification of Mycobacterium Fortuitum Virulent Membrane Genes as Potential Drug Targets. *Proceedings of the Indian Conference on Bioinformatics* [Birla Institute of Scientific Research, Jaipur, India: 7-9 November, 2017].
21. Poonam, Jitendraa Vashistt, Gopal Singh Bisht, **Rahul Shrivastava** (2017). Ribosomal Maturation Factor RimP as Potential Drug Target for M. Fortuitum. *Proceedings of the International conference on Advances in Plant and Microbial Biotechnology* [Jaypee Institute of Information Technology, Noida: 2-4 February 2017].
22. Nutan Thakur, Chetansee Khanna, Priyanka Sharma, Arti Kapil, **Rahul Shrivastava, Jitendraa Vashistt** (2017). Exploring Correlation Between Biofilm Formation Ability and Resistance Potential of Acinetobacter Baumannii Strains Isolated from Different Clinical Sources. *Proceedings of the International conference on Advances in Plant and Microbial Biotechnology* [Jaypee Institute of Information Technology, Noida : 2-4 February 2017].

23. Kinam Gupta, Poonam, J Vashistt, **Rahul Shrivastava** (2016). Analysis of transposon mutants' library in search of genes responsible for biofilm formation in a *Mycobacterium fortuitum*. *Proceedings of 57th Annual Conference of AMI & International Symposium; On Microbes and Biosphere: What's New and What's Next* [Guwahati, India; 24-27 November 2016].
24. Bishal Prasher, Divya Chauhan, Shivani Sood, **Rahul Shrivastava** (2016). Expression of cyclopropane mycolic acid synthase *pcaA* is essential for survival of *M. fortuitum* under in vitro stress conditions. *Proceedings of 57th Annual Conference of AMI & International Symposium; On Microbes and Biosphere: What's New and What's Next* [Guwahati, India; 24-27 November 2016].
25. **Rahul Shrivastava** (2016). Identification of Novel Gene(s) Responsible for *Mycobacterium fortuitum*. *Proceedings of the UK-India Workshop on Tackling the Emergence of Antimicrobial Resistance: increasing virulence and facilitating research network* [IMTECH Chandigarh: 7-10 November 2016].
26. Kriti Vaid, Shivani Sood, Shivani Saxena, Poonam, **Rahul Shrivastava** (2016). Isocitrate Lyase Homologue of *Mycobacterium fortuitum* Plays role in in-vitro Survival and Stress Response. *Proceedings of the International Conference on Innovative Research in Biotechnology, Biomedical Sciences, Bioinformatics and Stem cell Applications (BSC-2016)* [JNU, New Delhi, India : 30 January, 2016].
27. Ritu Ghildiyal, Shivani Sood, Jitendraa Vashistt, **Rahul Shrivastava** (2015). *Mycobacterium fortuitum* sigH antisense knock-out mutant shows reduced survival under in vitro stress conditions. *Proceedings of the 56th Annual Conference of Association of Microbiologists of India (AMI-2015) & International Symposium on Emerging Discoveries in Microbiology* [JNU, New Delhi, India].
28. Poonam, Monika Pradhan, Kanika Sharma, **Rahul Shrivastava** (2015). Identification of *Mycobacterium fortuitum* Virulence Factors using Transposon mutagenesis. *Proceedings of the 56th Annual Conference of Association of Microbiologists of India (AMI-2015) & International Symposium on Emerging Discoveries in Microbiology* [JNU, New Delhi, India: 7 - 10 December, 2015].

29. Nutan, Harish Changotra, **Rahul Shrivastava**, Nancy Grover, Jitendraa Vashistt (2015). Exploration of Drug Resistance Pattern of Diarrhoeagenic Pathogens in North - Western Himalayan Region of India: implications for use and misuse of antibiotics.. Proceedings of the European Congress of Clinical Microbiology and Infectious Diseases [25th: Copenhagen, Denmark.: 25-28 April, 2015].
30. S. Sood, P. Katoch, **Rahul Shrivastava** (2015). A conserved molecular mechanism of adaptation on exposure to acidic condition shown by fast growing pathogenic mycobacteria *Mycobacterium fortuitum*. Proceedings of the 25th European Congress of Clinical Microbiology and Infectious Diseases [Copenhagen, Denmark : 25-28 April, 2015].
31. Nutan, Swapanil Jain, Harish Changotra, **Rahul Shrivastava**, Jitendraa Vashistt (2015). Metagenomic Studies in Relation to Diarrheal Diseases. Proceedings of the International Congress on Friedreichs Ataxia and DNA Structure in Health & Disease [All India Institute of Medical Sciences, New Delhi, India: 11-13 April, 2015].
32. Anant Yadav, Shivani Sood, **Rahul Shrivastava** (2014). Promoter trap strategy for gene expression analysis under stress conditions of *M. tuberculosis* latency. *BMC Infectious Diseases*, 14 (3).
33. Shivani Sood, Anant Yadav, Poonam, **Rahul Shrivastava** (2014). *M. fortuitum* persistence on exposure to granuloma specific conditions: Implications for a surrogate model. *Proceedings of the International conference on Cellular and Molecular Mechanisms of Disease Processes* [University of Kashmir, Jammu & Kashmir, India].
34. Anant Yadav, Shivani Sood, **Rahul Shrivastava** (2014). Promoter trap strategy for gene expression analysis under stress conditions of *M. tuberculosis* latency. *Proceedings of the 2nd International Science Symposium on HIV and Infectious Diseases (HIV SCIENCE 2014)* [Chennai, India : 30 January - 1 February 2014].
35. Shivani Sood, Poonam, Jitendraa Vashistt, **Rahul Shrivastava** (2014). Reporter based two-pronged strategy: target validation and rapid drug screening against persistent mycobacteria.

Proceedings of the International Symposium on Cellular Response to Drugs and 38th All India Cell Biology Conference [38: Lucknow, India: 10-12 Dec. 2014].

36. V Jaiswal, **Rahul Shrivastava** and C Rout (2010) Computational analysis of immunogenic epitopes to identify vaccine candidate of influenza A virus with broad specificity. *Influenza: Translating basic insights*, Washington D.C., USA.
37. **Rahul Shrivastava**, Brahm S. Srivastava, Ranjana Srivastava, (2006) *M. fortuitum* murine infection model for screening of Antimycobacterial drugs and Identification of Virulence determinants; Symposium on New frontiers in Tuberculosis, International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India.

National Conferences / Symposia Proceedings:

1. Sharvi Sood, **Rahul Shrivastava** (2022). Immunotherapies for Tuberculosis. Proceedings of the National Seminar on “Emerging Trends & Innovations in Biosciences [School of Life and Allied Science, ITM University, Raipur (Chhattisgarh) India : 03 March, 2022].
2. Simran Gohan, **Rahul Shrivastava** (2021). CRISPR-Cas9 as Therapeutic for Hutchinson-Gilford Progeria Syndrome. Proceedings of the National Conference on “CRISPR/Cas: From Biology to Technology [SRM University – AP and Institute of Bioinformatics and Applied Biotechnology, Bengaluru : 25-27 November, 2021], pp.77-77.
3. Simran Gohan, **Rahul Shrivastava** (2021). Gene Therapy Strategies for tackling Hutchinson-Gilford Progeria. Proceedings of the National Conference on “Virtual National Conference on Transforming Trends in Life Science & Health care [DWARAKA DOSS GOVERDHAN DOSS VAISHNAV COLLEGE in association with Indian Science Congress Association (Chennai chapter) : 17-18 November, 2021], pp.87-87.
4. Deepika Sharma, Poonam Sharma, **Rahul Shrivastava**, Gopal Singh Bisht (2018). Design, Synthesis, Characterization and Evaluation of Antimycobacterial activities of Peptidomimetics. *Proceedings of the Himachal Pradesh Science Congress* [3rd: Indian Institute of Technology, Mandi, Himachal Pradesh, India: 22-23 October, 2018].

5. Ayushi Sharma, Jitendraa Vashist, **Rahul Shrivastava** (2018). Standardization of Biofilm Formation of an Opportunistic Pathogen Mycobacterium fortuitum for Rapid Drug Screening. *Proceedings of the Himachal Pradesh Science Congress* [3rd: Indian Institute of Technology, Mandi, Himachal Pradesh, India: 22-23 October, 2018].
6. Vedika Kayasth, Kshitiz Gupta, **Rahul Shrivastava** (2017). A Healing Plate from Sacred Lotus: Biopackaging Applications of Nelumbo Nucifera Leaves. *Proceedings of the Recent Advances in Ayurvedic Herbal Medicine - from Source to Manufacturing* [Uttarakhand Ayurved University, Dehradun, India: 15-16 September 2017], pp.87-87.
7. Rahul Pramjeet, Poonam, Arpita Prasad, **Rahul Shrivastava** (2017). Random Mutagenesis for Identification of potential drug targets for Non tubercular Mycobacteria. *Proceedings of the Himachal Pradesh Science Congress* [2nd: Shimla, Himachal Pradesh, India: 20-21 November, 2017].
8. Monika Pradhan, Kanika Sharma, Poonam, **Rahul Shrivastava** (2016). Identification of Novel Gene(s) Responsible for Drug Resistance in Mycobacterium fortuitum. *Proceedings of the Recent Advances in Biomedical Research: Strategies and Innovation* [AIIMS, New Delhi, India: 26-27 May 2016].
9. Shivani Saxena, Poonam, Kriti Vaid, **Rahul Shrivastava** (2016). Isocitrate Lyase Homologue of Mycobacterium Fortuitum is Necessary for in Vivo Survival of *M. fortuitum* in a Mouse Model. *Proceedings of the Recent Advances in Biomedical Research: Strategies and Innovation* [AIIMS, New Delhi, India : 26 - 27 May 2016].
10. Poonam, Pavan Kumar Agrawal, **Rahul Shrivastava** (2016). Antimycobacterial Activity of Leaf Extracts of Medicinal Plants Against *M. Smegmatis*. *Proceedings of the Recent Advances in Green Technology* [Bahara University, Shimla : 29- 30 September 2016].
11. Radhika Batta, Poonam, Harish Changotra, **Rahul Shrivastava**, Jitendraa Vashist (2015). Assessment of the resistance pattern in Klebsiella spp. against β -lactams in Himachal Pradesh.

Proceedings of the National Conference on Emerging Trends in Host-Microbe Interactions [DAV University, Jalandhar (Punjab) : 17 -18 April, 2015].

12. Nancy Koundal, Akanksha Tomar, Shilpa, Nutan, **Rahul Shrivastava**, Jitendraa Vashistt (2015). Comparative resistance pattern analysis of gram negative bacteria against commonly used antibiotics. Proceedings of the National Conference on Emerging Trends in Host-Microbe Interactions [DAV University, Jalandhar (Punjab) : 17-18 April 2015].
13. Ankita Thakur, Kriti Vaid, Shivani Saxena, Nutan, Jitendraa Vashistt, **Rahul Shrivastava** (2015). Aminoglycosides resistance pattern of Escherichia coli isolated from urine samples in various hospital settings of Himachal Pradesh. Proceedings of the National Conference on Emerging Trends in Host-Microbe Interactions [DAV University, Jalandhar (Punjab): 17-18 April, 2015].
14. Shivani Sood, Raj Kumar Tiwari, Neeraj Mahindroo, **Rahul Shrivastava** (2013). Establishment of Rapidly Growing Mycobacteria (RGM) as drug screening model for M. tuberculosis latent infection. Proceedings of the National conference on Research Trends in Drug Development: Exploration of Medicinal & Aromatic Plants [Shoolini University, Solan H.P., India].
15. Shivani Sood, Sree Krishna Chanumolu, Chittaranjan Rout, **Rahul Shrivastava***, (2012) Identification of Mycobacterial genes involved in Persistence as Potential Drug Targets, National Conference on 'NexGen Biotechnology: Amalgamating Science & Technology at UIET, Kurukshetra University, Kurukshetra, India.
16. **Rahul Shrivastava**, Brahm. S. Srivastava and Ranjana Srivastava, (2011) Mycobacterium fortuitum murine infection model: Persistence and Reactivation, National Symposium on Current Perspectives in Animal Biotechnology, pp6-7, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India
17. **Rahul Shrivastava**, R.P.S.Parti, S. Srivastava, Brahm S. Srivastava, Ranjana Srivastava, (2008) A mutant of Mycobacterium fortuitum attenuated in virulence and persistence in murine infection model which is complemented by Rv3291c of Mycobacterium tuberculosis. at - 'Dr. C. R. Krishnamurthi Memorial' Competition for Award of Young Scientist, at CDRI, Lucknow, India.

Proteome submission:

Mass spectrometry proteomics data from the project “Proteome analysis of *Mycobacterium fortuitum* biofilm” deposited to ProteomeXchange Consortium *via* PRIDE partner repository (2021). [Data set identifier: PXD023784].

GenBank Submissions: (Novel gene sequences submitted)

1. **Ayushi Sharma**, Jitendraa Vashistt, Rahul Shrivastava (2021). *Mycolicibacterium fortuitum* subsp. *fortuitum* DSM 46621 = ATCC 6841 putative 3-oxoacyl-ACP reductase (*fabG4*) gene, partial cds. [GenBank nucleotide accession: MW470669]
2. **Ayushi Sharma**, Jitendraa Vashistt, Rahul Shrivastava (2021). *Mycolicibacterium fortuitum* subsp. *fortuitum* DSM 46621 = ATCC 6841 putative 3-hydroxyacyl-ACP dehydratase (*hadC*) gene, partial cds. [GenBank nucleotide accession: MW470668]
3. Poonam, **Shrivastava, R.** [*Mycobacterium fortuitum* ATCC 6841] Putative transcription termination/antitermination factor NusA of *Mycobacterium fortuitum* [BankIt2198443 Seq MK574079].
4. Poonam, **Shrivastava, R.** [*Mycobacterium fortuitum* ATCC 6841] Probable ribosomal maturation factor RimP of *Mycobacterium fortuitum*. [BankIt2094302 Seq1 MH052677].
5. Divya, Poonam, **Shrivastava, R.** [*Mycobacterium fortuitum* ATCC 6841] Lipase U (*lipU*) of *Mycobacterium fortuitum* ATCC 6841. [BankIt2103688 Seq MH197269].
6. Poonam, Yennamalli, M. R., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Short Chain Dehydrogenase Sequence of *M. fortuitum* (ATCC 6841). [KY250516].
7. Poonam, Yennamalli, M. R., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Peptidase S9, prolyl oligopeptidase Protein. [KY250519].
8. Poonam, Sood, S., **Shrivastava, R.** [*Mycobacterium fortuitum* ATCC 6841] Probable Anthranilate Synthase Subunit I of *M. fortuitum* [KY250521].

9. Poonam, Sood, S., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Probable X-Pro dipeptidase. [KY250518].
10. Poonam, Sood, S., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Probable Replication Initiation and Membrane Attachment Protein DnaB.[KY250517].
11. Poonam, Sood, S., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Tentative Anthranilate Synthase Subunit II of *M. fortuitum* ATCC 6841. [KY250520].
12. Poonam, Sood, S., **Shrivastava, R.** [*M. fortuitum* ATCC 6841] Tentative Anthranilate Phosphoribosyltransferase of *M. fortuitum* ATCC 6841 [KY250522].
13. Shivani Sood, Varun Jaiswal, Poonam Katoch, Sandeep Kumar Sharma and **Rahul Shrivastava.** [*M. fortuitum* ATCC 6841] *M. fortuitum* isocitrate lyase, a homologue of *M. tuberculosis* H37Rv isocitrate lyase. [KM275229].
14. Shivani Sood, Varun Jaiswal, Poonam Katoch and **Rahul Shrivastava.** *M. fortuitum* homologue of *M. tuberculosis* sigma factor SigH. [KM282166].
15. Shivani Sood, Varun Jaiswal, Poonam Katoch and **Rahul Shrivastava.** [*M. fortuitum* ATCC 6841] *M. fortuitum* *pcaA*, a homologue of *M. tuberculosis* H37Rv *pcaA*. [KM282163].
16. Shivani Sood, Varun Jaiswal, Poonam Katoch and **Rahul Shrivastava.** [*M. fortuitum* ATCC 6841] *M. fortuitum* nitrate reductase *narX*, a homologue of *M. tuberculosis* H37Rv nitrate reductase *narX*. [KM282164].
17. Shivani Sood, Poonam Katoch, Varun Jaiswal and **Rahul Shrivastava.** [*M. fortuitum* ATCC 6841] *M. fortuitum* nitrate/nitrite transporter *narK2*, a homologue of *M. tuberculosis* H37Rv nitrate/nitrite transporter *narK2*. [KM282165].
18. **Rahul Srivastava,** et al: *M. fortuitum* strain ATCC 6841 AsnC-family regulatory protein gene, complete cds. [DQ648081].

Invited Talks / Lectures / Resource Person

1. Delivered an Invited Lecture on ‘*Wearable Biosensors: Recent Innovation in Bioscience Technology*’ at National Seminar on “Emerging Trends & Innovations in Biosciences” at the School of Life and Allied Science, ITM University, Raipur (Chhattisgarh) India; 3 March, 2022.
2. Oral talk on ‘Random Insertion Transposon Mutagenesis of *Mycobacterium fortuitum* Identified role of Anthranilate Phosphoribosyl transferase (trpD) in Biofilm Formation and Hypoxic Stress Survival’ at International Conference on Advances in Biosciences and Biotechnology [Jaypee Institute of Information Technology, Noida, India: 28th-30th January, 2021.
3. Oral talk on ‘An in Vitro Model for *Mycobacterium tuberculosis* Persistent Infection Drug Discovery Studies’. *Proceedings of the International Conference on Advances in Biosciences and Biotechnology - ICABB-2018* [Jaypee Institute of Information Technology, Noida: 01-03 February, 2018.
4. Delivered an Invited Lecture on ‘Antibody Engineering - Applications and Job Potential’ at G.B. Pant Engineering College, Pauri (U.K.): 18 September, 2018.
5. Delivered an Invited Lecture on ‘Requisite of Antibody Engineering to Mankind’, at G.B. Pant Engineering College, Pauri (U.K.): 18 September, 2018.
6. Resource person for six week workshop in “Molecular Pathogens and Medical Genomics”, domain for graduate and undergraduate students, at JUIT, Wagnaghat, Solan, June – July, 2018.
7. Acid Stress Based *Mycobacterium fortuitum* Model: a window to *Mycobacterium tuberculosis* latency. *Proceedings of the Himachal Pradesh Science Congress* [3rd. Indian Institute of Technology, Mandi, Himachal Pradesh, India: 22-23 October, 2018].
8. Oral talk on ‘Tackling a Problem with Persistence: A model for Tuberculosis Infection Studies’ at 2nd Himachal Pradesh Science Congress (HPSC-2017), Shimla, Himachal Pradesh, India: 20-21 November, 2017.

9. Resource person for six week workshop in “Molecular Pathogens and Medical Genomics”, domain for graduate and undergraduate students, at JUIT, Wagnaghat, Solan, June – July, 2017.
10. Guest Lecture on ‘Identification of novel genes responsible *M. fortuitum* drug resistance’ in UK-India Workshop on “Tackling the emergence of antimicrobial resistance: increasing virulence and facilitating research network” funded by the British Council and the Royal Society of Chemistry under the prestigious Newton Link Research Grants [IMTECH, Chandigarh; 7-10 November 2016].
11. Resource person for six week workshop in “Molecular Pathogens and Medical Genomics”, domain for graduate and undergraduate students, at JUIT, Wagnaghat, Solan, June – July, 2017.
12. Delivered an Invited Expert Lecture on ‘Safety in Laboratory: Dealing with Biologicals’ at National Seminars on Lab Safety in Chemistry organized by MM University Mullana, Haryana on November 12, 2014.
13. Delivered an Invited Lecture on “Biosensors” at AICTE -TEQIP sponsored Short Term course on “Eco Technology for Sustainable Development, 21 Oct to 25 Oct, 2013, G.B. Pant Engineering College, Pauri (U.K.).
14. Delivered an Invited Lecture on “Biology Laboratories - Safety and Etiquette” at Safety Week
15. Biosensors as Diagnostic Tools DST sponsored six weeks technology Based Entrepreneurship Development Program on 'Development of Bio-diagnostic Kits' 18th July to 18th Aug., 2012, Kurukshetra University, Kurukshetra (Haryana).

Faculty Development Programme Attended

S. No.	Title	Dates/ Duration	Sponsoring Agency and Organisation & Place held
1	Faculty Development Program on "Innovation in drug delivery technologies"	25th to 30th July, 2022	Jaypee Institute of Information Technology, Sector-62, Noida.
2	NEP 2020 Implementation in Higher Education Institutes	09-May-2022 to 13-May- 2022 One Week	Curriculum Development Centre Department , NITTTR, Chandigarh
3	Training of Trainer in Quality control biologist (life science Domain)	16/02/2021 to 06/03/2021 – Three weeks	LSSSDC Skill India
4	Waste Management for Sustainable Development	4 – 8 Jan 2021/ One week	Department of Civil Engineering, JUIT Waknaghat
5	Advanced Excel with Data Visualization	21-27 Dec 2020/ One week	E & ICT Academy, IIT Kanpur
6	Advancements in Biotechnology and Nanotechnology	21-26 Sep 2020/ One week	UIET, Panjab University, Chandigarh & Govt. College of Engg. And Technology, Jammu (TEQIP-III)
7	Faculty Development Programme “Outcome Based Education in Biotechnology and Bioinformatics”	24-30, December, 2015 – One week	JUIT, Solan, H.P.
8	Faculty Development Programme	14 th July 2014 – 19 th July, 2014	JUIT, Solan, H.P.

Research Guidance – PhD

S. No.	Enrol. No. & Name of the Student	Title of Thesis/Dissertation/Project	Names of Joint Supervisors	Level (PhD/DD/ M Tech/ M Phil /MS)	Status (Completed/ Ongoing)
1	Shivani Sood (106558)	Establishment and validation of <i>M. fortuitum</i> model for <i>M. tuberculosis</i> persistent infection	None	PhD	Completed
2	Poonam (136553)	Identification of macrophage invasion genes of <i>Mycobacterium fortuitum</i> as potential drug targets	None	PhD	Completed
3	Ayushi Sharma (176553)	Biofilm associated drug target identification of <i>Mycobacterium fortuitum</i>	One	PhD	Ongoing
4	Monika Choudhary (176556)	Global proteome analysis of <i>Acinetobacter baumannii</i> biofilm for identification of novel drug targets	One	PhD	Ongoing
5	Manisha Sharma (206552)	Diversity Analysis & Evolutionary Studies in indigenous cattle using mitochondrial genome	One	PhD	Ongoing

Research Guidance: M. Tech / M.Sc.

S. N.	Enrol. No. & Name of the Student	Title of Thesis/ Dissertation/Project	Name of Joint Supervisor	Level(Ph.D /DD/ M.Tech/M. Phil/ M.S)	Status (Completed/ Ongoing)
1	Anamika Verma (197819)	Biofilm and Hospital Acquired Infection: Mechanism, Tolerance and Treatment	None	M.Sc.	Completed - June'2021
2	Manoj Kumar (197802)	A Study on Mechanism of Multidrug Resistance in Bacterial Pathogens	None	M.Sc.	Completed - June'2021
3	Ritu Ghildiyal (142551)	Growth Kinetics and Characterization of <i>Mycobacterium fortuitum</i> Sense and Antisense Mutants Of Sigma Factor sigH	None	M.Tech	Completed - May, 2016
4	Shivani Saxena (111806)	Growth Kinetics of <i>Mycobacterium fortuitum</i> Isocitrate Lyase Mutants Under In Vivo And Stress Conditions.	None	M.Tech	Completed- May, 2016
5	Kriti Vaid	A comprehensive	None	M.Tech	Completed

	(111801)	report on the regulatory steps required for Vaccine approval in India	(Industry Collaboration)		- May, 2016
6	Chhama Pandey (132558)	Lab scale purification of proteins	None (Industry Collaboration)	M.Tech	Completed - May, 2015
7	Abhishek Pathania (132556)	Project report on wine and vinegar production	None (Industry Collaboration)	M.Tech	Completed - May, 2015
8	Ankita Thakur (101711)	Comparative Analysis of QRDR Regions of drug resistant <i>Salmonella typhi</i> strains	Dr. Jitendra Vashist	M.Tech	Completed - May, 2015
9	Divya (133801)	Construction of lipF anti-sense knock out mutant of <i>Mycobacterium fortuitum</i> and study of its role in <i>in-vivo</i> infection and virulence	None	M.Tech	Completed - May, 2018
10	Arpita Prasad	Immunological Analysis of <i>M.</i>	None	M.Tech	Completed -

	(162553)	<i>fortuitum</i> Anthranilate Synthase mutants			May, 2018
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Conferences/ Workshops/ Seminars Organized

S. No.	Title	Dates/ Duration	Sponsoring Agency and Organisation & Place held
1.	Summer Training Workshop – 2022 (6 Week Training Programme For Participants Across India)	June 1, 2022 – July 13, 2022	Funds for chemicals etc, raised from summer training participants fee. Organized by the Deptt. of BT&BI, JUIT, Solan, H.P.
2.	Summer Training – 2018 (6 Week Training Programme For Participants Across India)	June 1, 2018 – July 12, 2018	Funds for chemicals etc, raised from summer training participants fee. Organized by the Deptt. of BT&BI, JUIT, Solan, H.P.
3.	National Symposium on Computational System Biology (NSCSB-2016)	18-20, March, 2016 (Organizing Committee)	DBT, and JUIT, Wagnaghat
4.	National Workshop on Statistical Techniques in Biological and Medical Sciences (STBMS)-2016	13-18, June, 2016 (Organizing Committee)	DBT, and JUIT, Wagnaghat
5.	One week Aptitude Training and Placement Workshop - for students from all Departments	31 Aug'16 to 5 September, 2016	JUIT, Solan, H.P.
6.	CV and Personal Interview Grooming Workshop <i>“Insights of Group Discussion & Personal Interview”</i>	18 th , September, 2016	JUIT, Solan, H.P.

7.	One day workshop on Career Prospects in Biotechnology and Bioinformatics	28 th November 2016	JUIT, Solan, H.P.
8.	Summer Training – 2015 (6 Week Training Programme For Participants Across India)	June 1, 2015 – July 12, 2015	Funds for chemicals etc, raised from summer training participants fee. Organized by the Deptt. of BT&BI, JUIT, Solan, H.P.
9.	5 - Lecture series related to career avenues and opportunities in BT & BI	April 11, 2015 – May 9, 2015	JUIT, Solan, H.P.
10.	Aptitude Training and Placement Workshop-for students from the department	23-28, August,2015	JUIT, Solan, H.P.
11.	CV and Personal Interview Grooming Workshop	14-16, September, 2015	JUIT, Solan, H.P.
12.	Training and Placement Workshop – for students from all departments.	25 th July 2014 – 7 th Aug, 2014	JUIT, Solan, H.P.
13.	Training and Placement Workshop for Biotechnology and Bioinformatics Students	8 th Aug, 2014 - 9 th Aug 2014	JUIT, Solan, H.P.

Conferences/ Workshops/ Seminars Attended

S. No.	Title	Dates/ Duration	Sponsoring Agency and Organisation & Place held
1	Data Analytics and its Research Perspectives	6th –11th June 2022 (One Week)	Department of CSE/ IT, Jaypee University of Information Technology, Wagnaghat, Solan
2	Data Science and Machine Learning in Biology	14 Feb - 24 Feb, 2022	Dollar Education Group
3	Industrial Revolution 4.0	3 July - 4 Sep 2021 (One Week, Every Saturday)	Department of ECE, Jaypee University of Information Technology, Wagnaghat, Solan
4	National Level Workshop on “Growing Role of Machine Learning in Cyber-Security”	Two Weeks 13th - 24th June, 2022	Department of CSE/ IT, Jaypee University of Information Technology, Wagnaghat, Solan Himachal Pradesh
5	One day workshop on "Environment and Sustainability"	09-Jun-22	JIIT, Noida and JUIT, Wagnaghat
6	Attracting grants and funds for research	14-Sep-2021	Wiley Publishing
7	Containersation & DevOps Practices for Bioinformatician	18-Dec-2021	CEHTI, Department of Biotechnology and Bioinformatics, JUIT
8	Research Data Management and FAIR Principles for Healthcare Data	9-Oct-2021	CEHTI, Department of Biotechnology and Bioinformatics, JUIT

9	FuSe: A Tool for Functional Analysis of RNA-Seq Data	20-Nov-2021	CEHTI, Department of Biotechnology and Bioinformatics, JUIT
10	International Conference on “Technological Intervention in Renewable Energy for Sustainable Environment (RESE-2021)”	24 & 25 November 2021	Centre of Excellence in Sustainable Technologies for Rural Development [CESTRD], Department of Biotechnology and Bioinformatics, Jaypee University of Information Technology (JUIT), Wagnaghat, Solan, H.P., INDIA.
11	National Science Day Symposium	28-Feb-22	JUIT, Wagnaghat, Solan and HIMCOSTE, Govt. of H.P.
	Adverse drug reactions: Issues and challenges during Covid-19	10-11 January 2022	School of Health Sciences and Technology, UPES, Dehradun
12	International Conference on Advances in Biosciences and Biotechnology on “Recent Trends in Biosciences and Biomedical Research”	28-30 January 2021 / Three days	Jaypee Institute of Information Technology, Noida
13	International Conference on “Technologies for Environmental Sustainability and Smart Agriculture” organized by Centre of Excellence in Sustainable Technologies for Rural Development [CESTRD]	18-19 September 2020/ Two days	Department of Biotechnology and Bioinformatics, JUIT, Wagnaghat, Solan (H.P.)

14	Hands on workshop on Bioinformatics tools in Research	17-19 September 2020/ Three days	Department of Biotechnology, IIIT Noida
15 16	Women Innovation and IPR	8-13 March, 2021/ One Week Workshop	IPR Cell, JUIT, Wagnaghat, Solan, H.P. India
	Research and Innovation Showcase (RAISE)	20-25 March 2021/ One Week Workshop	IPR Cell, JUIT, Wagnaghat, Solan, H.P. India
17	Third Himachal Pradesh Science Congress	22-23 Oct-2018	IIT Mandi, H.P.
18	International Conference on Advances in Biosciences and Biotechnology	01-03 Feb-2018	Jaypee Institute of Information Technology, Noida
19	Workshop on “Research-Based Pedagogical Tools”	10-13 Dec-2017	IIT Gandhinagar, Travel Award by Newton Bhabha Fund of the British Council
20	One – day Workshop on “Patent Filing and geographical Indications”	27-Feb-2017	JUIT, Solan, H.P.
21	One – day Workshop on “Innovation and Intellectual Property Rights”	9-Dec-2016	JUIT, Solan, H.P.
22	Workshop on “Tackling the emergence of antimicrobial resistance: increasing virulence and facilitating research network”	7-10 November 2016	IMTECH, Chandigarh sponsored by British Council and the Royal Society of Chemistry
23	National Workshop on Statistical Techniques in Biological and Medical Sciences (STBMS)-2016	13-18, June, 2016	DBT and JUIT, Wagnaghat
24	56th Annual Conference of	7-10, December, 2015	JNU, New Delhi &

	Association of Microbiologists of India & International Symposium on Emerging Discoveries in Microbiology		association of microbiologists of India (AMI-2015)
25	XXXVIII All India Cell Biology Conference and International Symposium on "Cellular Responses to Drugs"	10-12 Dec, 2014	CDRI Lucknow, India.
26	International conference on Cellular and Molecular Mechanisms of Disease Processes	3-16 April, 2014	Srinagar, Jammu & Kashmir, India
27	Workshop on Molecular Diagnostics: Challenges vis-a-vis Growth Potential.	June 8, 2012 (1 Day)	Department of Biotechnology, New Delhi, India)
28	Indo-Taiwan International workshop on 'Drug development for cancer and infectious diseases.	Dec 14 & 15' 2011 (Two Day)	Department of Science and Technology, at Moga, Punjab, India.
29	National Symposium on Current Perspectives in Animal Biotechnology	Feb, 2011	Bharathidasan University, Tiruchirappalli, Tamil Nadu
30	Symposium on - New frontiers in Tuberculosis.	Dec, 2006	International Centre for Genetic Engineering and DBT, New Delhi, India.
31	International Conference on Mycobacterial Infection [VDMI]	Feb, 2005	Indian Institute on Technology, Kharagpur, India
32	3rd Indo-US workshop on Applications of Flow Cytometry in Drug Mechanistics	Sep, 2003	Regional Research Laboratory, Jammu, India

Courses Taught

S. No.	Course Code	Course Title
1	20MS1BT114	Microbiology
2	20MS7BT173	Microbiology Lab
3	21MS7MB171	General Microbiology And Bacteriology Lab
4	18MS1BT313	Recombinant DNA Technology
5	18MS7BT373	Recombinant DNA Technology Lab
6	18MS1BT211	Immunology and Immunotechnology
7	14B1WBT736	Antibody Engineering Technologies
8	14B11BI311	Microbiology and Immune System
9	14B17BI371	Microbiology and Immune System Lab
10	10B11BT615	Diagnostics And Vaccine Manufacture Technologies
11	10B17BT675	Diagnostics And Vaccine Manufacture Technologies Lab
12	14M11BT212	Immunotechnology
13	14M17BT272	Immunotechnology Lab
14	10B1WBT515	GLP and Instrumentation
15	10B1WBT575	GLP and Instrumentation Lab
16	13B17BT173	GLP and Instrumentation Processes Lab
17	14M1WBT332	Clinical Diagnostics

Membership of Professional Bodies

1. ***Life Member - INDIAN SOCIETY OF CELL BIOLOGY [Membership No. 2014029]***
2. ***Life Member – Indian Science Congress [Membership No. L17131]***
3. ***Life Member - The Association of Microbiologists of India [Membership No. 3875-2014]***

Reviewer for the following Journals

- i. Scientific Reports
- ii. JAAD Case Reports
- iii. International Journal of Microbiology Research
- iv. Frontiers Cellular and Infection Microbiology
- v. Frontiers in Microbiology
- vi. Interdisciplinary Sciences: Computational Life Sciences
- vii. Plos One