

## Priyanka Mehta

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### Education

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2019	M.Sc. Bioinformatics	Pondicherry University, PU, India.
2017	B.Sc. Microbiology	Scottish Church College, Calcutta University, WB, India.

### Research Experience

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Aug 2022-Ongoing	<b>PhD in Biological Sciences</b> with Dr Rajesh Pandey, CSIR: Institute of Genomics and Integrative Biology(IGIB), New Delhi, India.
Jan 2022-Aug 2022	<b>Data Analyst</b> with Dr Rajesh Pandey, CSIR: Institute of Genomics and Integrative Biology (IGIB), New Delhi, India. <i>COVID-19: Enhance Genomic Surveillance &amp; Genetic Epidemiology of SARS-CoV- 2 in India.</i>
Sept 2020-Oct-2021	<b>Project Associate</b> with Dr Rajesh Pandey, CSIR: Institute of Genomics and Integrative Biology (IGIB), New Delhi, India. <i>Biomedical analysis and bioinformatics within the Integrative GENomics of COVID-19 (INGEN-CoV2) research program.</i>
Jan 2019- May 2019	<b>Master's Degree research</b> with Dr P.T.V. Lakshmi, Centre for Bioinformatics Pondicherry University, Puducherry, India. <i>Association Rule Mining approach to identify the correlation between organoleptic properties and bioactivities of phytochemicals.</i>
May 2018 -July 2018	<b>Internship</b> with Dr Sudipto Saha, Bose Institute, Kolkata, West Bengal, India <i>Distinguish Obstructive Airway Disease like COPD and Asthma by Machine Learning algorithmic analysis of HR CT-scans.</i>
Dec 2017- Jan 2018	<b>Internship</b> with Dr Sayak Ganguli at The Biome, West Bengal, India. <i>Computational Gene identification from HIV-1 virus genome and Designing Antisense siRNA against them.</i>

### Publications (ORCID: 0000-0001-6298-4322)

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#### 2021

1. **Mehta P\***, Sahni S\*, Siddiqui S\*, Mishra N\*, Sharma P, Sharma S, Tyagi A, Chattopadhyay P, Vivekanand A, Devi P, Khan A. Respiratory co-infections: modulators of SARS-CoV-2 patients' clinical sub-phenotype. *Frontiers in Microbiology*. 2021:1268. (\* contributed equally)

2. Shastri J, Parikh S, Aggarwal V, Agrawal S, Chatterjee N, Shah R, Devi P, **Mehta P**, Pandey R. Severe SARS-CoV-2 breakthrough reinfection with delta variant after recovery from breakthrough infection by alpha variant in a fully vaccinated health worker. *Frontiers in Medicine*. 2021:1379.
3. Devi P, Khan A, Chattopadhyay P, **Mehta P**, Sahni S, Sharma S, Pandey R. Co-infections as modulators of disease outcome: minor players or major players?. *Frontiers in Microbiology*. 2021 Jul 6;12:664386.
4. **Mehta, P.**; Alle, S.; Chaturvedi, A.; Swaminathan, A.; Saifi, S.; Maurya, R.; Chattopadhyay, P.; Devi, P.; Chauhan, R.; ... Pandey, R. Clinico-Genomic Analysis Reveals Mutations Associated with COVID-19 Disease Severity: Possible Modulation by RNA Structure. *Pathogens* 2021, 10, 1109.
5. Sarif J\*, Raychaudhuri D\*, D'Rozario R\*, Bandopadhyay P\*, Singh P\*, **Mehta P\***, Hoque MA, Sinha BP, Kushwaha M, Sahni S, Devi P. Plasma gradient of soluble urokinase-type plasminogen activator receptor is linked to pathogenic plasma proteome and immune transcriptome and stratifies outcomes in severe COVID-19. *Frontiers in Immunology*. 2021 Oct 28;12:738093. (\* contributed equally)
6. **Mehta P\***, Yadav M\*, Ahmed V\*, Goyal K, Pandey R, Chauhan NS. Culture-independent exploration of the hypersaline ecosystem indicates the environment-specific microbiome evolution. *Frontiers in Microbiology*. 2021 Oct 28;12:686549. (\* contributed equally)
7. Dhar MS, Marwal R, Vs R, Ponnusamy K, Jolly B, Bhoyar RC, Sardana V, Naushin S, Rophina M, Mellan TA, Mishra S... **Mehta P**. Genomic characterization and epidemiology of an emerging SARS-CoV-2 variant in Delhi, India. *Science*. 2021 Nov 19;374(6570):995-9.
8. Jha N\*, Hall D\*, Kanakan A\*, **Mehta P\***, Maurya R, Mir Q, Gill HM, Janga SC, Pandey R. Geographical landscape and transmission dynamics of SARS-CoV-2 variants across India: a longitudinal perspective. *Frontiers in Genetics*. 2021 Dec 17;12:753648. (\* contributed equally)
9. Kale P, Gupta E, Bihari C, Patel N, Rooge S, Pandey A, Bajpai M, Khillan V, Chattopadhyay P, Devi P, Maurya R... **Mehta P** Vaccine breakthrough infections by SARS-CoV-2 variants after ChAdOx1 nCoV-19 vaccination in healthcare workers. *Vaccines*. 2021 Dec 31;10(1):54.

## 2022

10. Kanakan A\*, **Mehta P\***, Devi P, Saifi S, Swaminathan A, Maurya R, Chattopadhyay P, Tarai B, Das P, Jha V, Budhiraja S. Clinico-Genomic Analysis Reiterates Mild Symptoms Post-vaccination Breakthrough: Should We Focus on Low-Frequency Mutations?. *Frontiers in Microbiology*. 2022 Mar 3;13:763169. (\* contributed equally)
11. Alle S, Kanakan A, Siddiqui S, Garg A, Karthikeyan A, **Mehta P**, Mishra N, Chattopadhyay P, Devi P, Waghdhare S, Tyagi A. COVID-19 Risk Stratification and Mortality Prediction in Hospitalized Indian Patients: Harnessing clinical data for public health benefits. *PLoS One*. 2022 Mar 17;17(3):e0264785.
12. Maurya R, Mishra P, Swaminathan A, Ravi V, Saifi S, Kanakan A, **Mehta P**, Devi P, Praveen S, Budhiraja S, Tarai B. SARS-CoV-2 mutations and COVID-19 clinical outcome: mutation global frequency dynamics and structural modulation hold the key. *Frontiers in Cellular and Infection Microbiology*. 2022 Mar 21;12:245.
13. Devi P\*, Maurya R\*, **Mehta P\***, Shamim U\*, Yadav A, Chattopadhyay P, Kanakan A, Khare K, Vasudevan JS, Sahni S, Mishra P. Increased abundance of *Achromobacter xylosoxidans* and *Bacillus cereus* in upper

airway transcriptionally active microbiome of COVID-19 mortality patients indicates role of co-infections in disease severity and outcome. *Microbiology Spectrum*. 2022 Jun 29;10(3):e02311-21. (\***contributed equally**)

14. Maurya R, Shamim U, Chattopadhyay P, **Mehta P**, Mishra P, Devi P, Swaminathan A, Saifi S, Khare K, Yadav A, Parveen S. Human-host transcriptomic analysis reveals unique early innate immune responses in different sub-phenotypes of COVID-19. *Clinical and Translational Medicine*. 2022 Jun;12(6).
15. Chattopadhyay P, Mishra P, Khare K, Yadav A, **Mehta P**, Saifi S, Swaminathan A, Devi P, Parveen S, Tyagi A, Jha V. LncRNAs harbouring regulatory motifs within repeat elements modulate immune response towards COVID-19 disease severity and clinical outcomes. *Clinical and Translational Medicine*. 2022 Jul;12(7).
16. **Mehta P**, Swaminathan A, Yadav A, Chattopadhyay P, Shamim U, Pandey R. Integrative genomics important to understand host–pathogen interactions. *Briefings in Functional Genomics*. 2022 Jul 30:elac021.
17. **Mehta P\***, Ravi V\*, Devi P, Maurya R, Parveen S, Mishra P, Yadav A, Swaminathan A, Saifi S, Khare K, Chattopadhyay P. Mutational dynamics across VOCs in International travellers and Community transmission underscores importance of Spike-ACE2 interaction. *Microbiological research*. 2022 Sep 1;262:127099. (\* **contributed equally**)
18. Chattopadhyay P\*, Mishra P\*, **Mehta P\***, Soni J, Gupta R, Tarai B, Budhiraja S, Pandey R. Transcriptomic study reveals lncRNA-mediated downregulation of innate immune and inflammatory response in the SARS-CoV-2 vaccination breakthrough infections. *Frontiers in immunology*. 2022 Nov 18;13:1035111. (\* **contributed equally**)

## 2023

19. D’Rozario R, Raychaudhuri D, Bandopadhyay P, Sarif J, **Mehta P**, Liu CS, Sinha BP, Roy J, Bhaduri R, Das M, Bandyopadhyay S. Circulating interleukin-8 dynamics parallels disease course and is linked to clinical outcomes in severe COVID-19. *Viruses*. 2023 Feb 16;15(2):549.
20. Sinha BP\*, **Mehta P\***, Hoque MA, Bandopadhyay P, Nandi A, Saha I, Nandi Mitra A, Mondal A, Bhattacharjee B, Chamilos G, Pandey R. Deficient Phagocytosis in Circulating Monocytes from Patients with COVID-19-Associated Mucormycosis. *Mbio*. 2023 Apr 13:e00590-23. (\* **contributed equally**)
21. **Mehta P\***, Chattopadhyay P\*, Ravi V, Tarai B, Budhiraja S, Pandey R. SARS-CoV-2 infection severity and mortality is modulated by repeat-mediated regulation of alternative splicing. *Microbiology Spectrum*. 2023 Oct 17;11(5):e01351-23. (\* **contributed equally**)
22. Chhimwal J, Anand P, **Mehta P**, Swarnkar MK, Patial V, Pandey R, Padwad Y. Metagenomic signatures reveal the key role of phloretin in amelioration of gut dysbiosis attributed to metabolic dysfunction-associated fatty liver disease by time-dependent modulation of gut microbiome. *Frontiers in Microbiology*. 2023;14.
23. Khare K, Chattopadhyay P, Devi P, **Mehta P**, Raina A, Liu CS, Tardalkar K, Joshi MG, Pandey R. Dysregulated metal ion homeostasis underscores non-canonical function of CD8+ T cell during COVID-19. *Frontiers in Medicine*. 2023; Oct 10.

24. Yadav S\*, **Mehta P\***, Soni J\*, Chattopadhyay P\*, Devi P, Habyarimana T, Tardalkar K, Joshi M, Pandey R. Single-cell RNA-Seq reveals intracellular microbial diversity within Immune cells during SARS-CoV-2 Infection and Recovery. iScience. 2023 Oct 30. (\* **contributed equally**)

## 2024

25. **Mehta P**, Chattopadhyay P, Mohite R, D’Rozario R, Bandopadhyay P, Sarif J, Ray Y, Ganguly D, Pandey R. Suppressed transcript diversity and immune response in COVID-19 ICU patients: a longitudinal study. Life Science Alliance. 2024 Jan 1;7(1).
26. Pandey, R., Soni, J., Chattopadhyay, P., **Mehta, P.**, Mohite, R., Tardalkar, K. and Joshi, M., Dynamics of Whole Transcriptome Analysis (WTA) and Surface markers expression (AbSeq) in Immune Cells of COVID-19 Patients and Recovered captured through Single Cell Genomics. Frontiers in Medicine, 11, p.1297001.
27. Chattopadhyay P\*, **Mehta P\***, Soni J, Tardalkar K, Joshi M, Pandey R. Cell-specific housekeeping role of lncRNAs in COVID-19-infected and recovered patients. NAR Genomics and Bioinformatics. 2024 Mar 1;6(1):lqae023. (\* **contributed equally**)
28. Chattopadhyay P, **Mehta P**, Kanika, Mishra P, Liu CSC, Tarai B, Budhiraja S, Pandey R, RNA editing in host lncRNAs as potential modulator in SARS-CoV-2 variants-host immune response dynamics. iScience. 2024 April 26.

## Book chapter

1. Chattopadhyay P, **Mehta P**, Maurya R, Mishra P, Kumari M, Devi P, Khare K, Yadav A, Srivastava M, Shamim U, Pandey R. Experimental repertoire to elucidate the functional landscape of host–pathogen interactome. Genomic Surveillance and Pandemic Preparedness 2023 Jan 1 (pp. 227-266). Academic Press.

## Strengths & Skills

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- Proficient in the following coding languages-
  - R, Python, Perl, Streamlit
  - Basics of Html and Css.
- Skilled in Statistical techniques such as-
  - RNA-seq data analysis,
  - Single Cell data analysis,
  - NGS data analysis from Nanopore and Illumina platforms,
  - Metagenomics (16S rRNA and WGS),
  - Biostatistics and Data visualisation.
  - Phylogenetic and mutational analyses,
- Operating Systems :
  - Linux, Windows

## Awards and Achievements

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2019-2020	Scholarship for Meritorious Students, Pondicherry University.
2024	International Travel Support (ITS)-SERB
2024	Travel Bursary from Immunology Foundation
2024	RNA Soceity Research Presentation Fellowship

### National/International Conferences/Workshop

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1. Poster Presentation at RNA Society Annual Meeting 2024, United Kingdom (28 May, 2024 to 02 June, 2024)
2. Poster Presentation at “Genomics for Better Health” national symposium at University of Kashmir, Srinagar, September 2023.
3. Poster Presentation at 45th All India Cell Biology Conference International Symposium on Biology of Development and Disease, January 2023.
4. Computational Biology Trainer for 1st Indo-Vietnam Hands-on Training Workshop on Genomic Surveillance and Pandemic Preparedness
5. Computational Biology Trainer for 2nd Indo-Vietnam Hands-on Training Workshop on understanding AMR using Nanopore Technology

### Certifications

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1. Tools and Techniques to Perform Molecular Modelling and Computer-Aided Drug Design (MMTT-2021), International Workshop, January 2021.
2. Advanced Computer-Aided Drug Designing by Schrodinger, Biotechnika, Certificate, July 2019.
3. Big Data Analytics and Cloud Computing, Mr S.Sundara Pandian, Tandem Certification Centre, Tirunelveli. Certificate, September 2018.
4. Next Genomic Era-NGS: A Clinical Approach, Pondicherry University, DBT, Govt. of India, New Delhi, Two-day course, Certificate, March 2018.
5. Trends in Cancer Omics, Pondicherry University and ICMR, One day course, certificate, March 2018.
6. Network Biology, Dr Ganesh Bagler, Center for Computational Biology, IIIT, New Delhi. Certificate, February 2018.
7. Cross-talk in Omics, Centre for Bioinformatics, Pondicherry University, One day course, August 2017.

### Co-curriculum

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- **Training:** Indo-Vietnam training: Hands-on Training Workshop on Sequencing Techniques.
- **Book Cover Design:** Genomic Surveillance and Pandemic Preparedness 2023 Jan 1 (pp. 227-266). Academic Press.
- **Magazine article:** Unlocking the secrets of alternative splicing: A tale of two isoforms (<https://pulse.igib.res.in/?p=3133>).

- Module designing for 2nd Indo-Vietnam Hands-on Training Workshop ([ingen-hope.github.io/amr\\_ont/](https://ingen-hope.github.io/amr_ont/))

### Member

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Indian Society of Cell Biology, 2023-2024

RNA society, Member no: 2024-2025