

Precision Medicine Lab – Fact Sheet

Who we are

The Precision Medicine Lab (PML) is a non-profit, interdisciplinary research institute dedicated to leveraging the latest advancements in biological sciences, data science, and technology to tackle some of today's most pressing challenges. As an affiliate of the National Centre for Big Data and Cloud Computing, funded by the Federal Government of Pakistan, we are committed to conducting world-class, home-grown research that is both innovative and impactful.

Located in Phase 5, Hayatabad, Peshawar, within one of Pakistan's most dense healthcare clusters, PML benefits from strong collaborations with leading hospitals, universities, and research institutions across the country.

What we do

At PML, we believe in a future where science transcends boundaries, innovation thrives in resource-limited settings, and research is accessible to all. Our approach is driven by:

- **Interdisciplinary Research** – Merging expertise from biology, medicine, AI, policy, and design.
- **Scientific Rigor & Integrity** – Upholding the highest standards of research excellence.
- **Responsible Innovation** – Balancing bold scientific exploration with ethical considerations.
- **Impact-Driven Science** – Prioritizing real-world solutions over academic prestige.

We foster an environment that values experimentation, and discovery—one where failure is seen as a stepping stone to breakthroughs.

How we work

PML brings together some of the most talented researchers and students from diverse backgrounds, including medicine, dentistry, data science, bioinformatics, molecular biology, microbiology, economics, policy, and even art and design.

Our Structure

- **Research Groups** – Focus on specific fields with both external and lateral collaborations.
 - **Dedicated Studies** – IRB-approved projects with or without dedicated funding.
 - **Operations Team (Ops)** – Manages project administration, finance, talent, procurement, and communications.
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Key focus areas

PML is actively pushing boundaries in the following research domains:

- **Genomes and Multiomes** – Unraveling the complexity of genomic and multi-omic data.
 - **Network Biology** – Understanding biological systems through computational modeling.
 - **Cells and Models** – Exploring cellular mechanisms and disease modeling.
 - **Wearable Technology** – Leveraging biosensors for real-time health monitoring.
 - **AI in Biomedicine** – Integrating artificial intelligence into biomedical research.
 - **Bioeconomy** – Investigating the economic potential of biotechnology innovations.
 - **Bioart** – Merging science and creativity to communicate complex research.
 - **Space Biology & Medicine** – Studying biological adaptations to space environments.
 - **Synthetic Biology** – Engineering biological systems for new medical applications.
 - **Biodiversity** – Understanding and preserving genetic diversity in living organisms.
 - **Science Policy** – Advocating for evidence-based policymaking
 - **Science Education** – Advocating for STEM education.
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PML is reshaping the future of biomedical research by bridging science, technology, and community. Our mission is to translate cutting-edge discoveries into real-world solutions, making precision medicine a reality for all.

For press inquiries, collaborations, or more information, visit our website or contact our Community Engagement Specialist at [fizzah[at]precisionmedicine.pk].