Confederation of Indian Industry

Global Genomics Summit

'Decoding the Future: Genomics as a Catalyst for Innovation and Growth'

25th August 2025; New Delhi

CONCEPT NOTE

August 2025

1. Background

The 21st century is witnessing an unprecedented transformation in science and technology, with **genomics emerging as a cornerstone of this evolution**. Advances in genomic research and technologies—ranging from whole-genome sequencing to CRISPR, pharmacogenomics, bioinformatics, and precision medicine—are enabling breakthroughs in human health, agriculture, environment, and industrial biotechnology.

Genomics is not only enhancing our understanding of complex biological systems but is also **acting as a catalyst for innovation and economic growth**. Global genomics markets are projected to grow significantly, with applications poised to influence preventive healthcare, sustainable food systems, disease eradication, biopharma innovation, and more.

India, home to **1.4 billion genetically diverse individuals**, a fast-developing scientific ecosystem, and a growing pool of bio-entrepreneurs, is uniquely placed to lead the next wave of genomics-driven development. However, this potential can only be unlocked through **strategic investments, multi-stakeholder collaboration, policy innovation, and public-private-academic partnerships**.

In this context, the **Confederation of Indian Industry (CII)** is convening the **Global Genomics Summit**—a high-impact forum aimed at mainstreaming genomics as a national priority and cross-sectoral innovation driver.

2. Objectives

The primary objectives of the summit are:

- **To provide a strategic platform for thought leadership** and dialogue on emerging trends, challenges, and opportunities in genomics.
- **To foster interdisciplinary collaboration** between scientists, industries, startups, and policymakers in scaling genomic applications across healthcare, agriculture, and sustainability.
- **To identify policy and regulatory enablers** that can accelerate genomic innovation in India.
- **To build awareness and capacity** around ethical, legal, social, and data security dimensions of genomics.
- **To promote entrepreneurship and investment** in genomic research and bio-innovation ventures.

3. Theme

'Decoding the Future: Genomics as a Catalyst for Innovation and Growth'

This theme captures the emergence of genomics as one of the most powerful and transformative sunrise sectors of the 21st century — at the intersection of technology, innovation, and national capability building.

For India, this presents a strategic opportunity to lead in an area where our strengths in science, digital infrastructure, and diverse population give us a natural edge. Genomics is not just a scientific tool — it is a national innovation engine that can power:

- Next-gen healthcare through personalized and preventive medicine
- Future-ready agriculture through climate-resilient and high-yield crops
- Deep-tech entrepreneurship through biotech startups and R&D investments
- Global competitiveness and talent development

As the world pivots towards bioeconomy-driven growth, genomics will be a catalyst not just for innovation, but for inclusive, scalable, and sustainable development. The Summit aims to position India as a frontrunner in this sunrise sector — by shaping enabling policy, forging global partnerships, and accelerating investment into genomic science and technology.

4. Session Themes

The summit will feature multi-format sessions including keynote addresses, panel discussions, fireside chats. Tech talks under the following thematic tracks:

1. **Genomics in Precision Healthcare and Public Health**
   - Early diagnosis, personalized treatments, predictive analytics, and population genomics.
   - Managing rare and genetic diseases through genome mapping and AI integration.

2. **Pharmacogenomics and Personalized Drug Discovery**
   - Role of genetic variations in drug efficacy and safety.
   - Accelerating clinical research through genomics-driven trials.

3. **Agrigenomics and Food Security**
   - Genetic improvements in crops for yield, nutrition, and climate resilience.
   - Animal genomics for disease resistance and productivity.

4. **Bioinformatics, AI and Big Data in Genomics**

- Computational biology, machine learning, and data visualization for genome interpretation.
- Building genomic data infrastructures and analytics tools.

5. **Cancer Genomics and Targeted Therapies**
   - Genomic insights into tumor evolution and precision oncology.
   - Clinical integration of gene panels, biomarkers, and liquid biopsy tools.

6. **Environmental Genomics for Sustainability**
   - Biodiversity conservation, pollution mitigation, and bioremediation using genomic tools.
   - Applications in climate change and ecological monitoring.

7. **Technology enablers**
   - Policies on technology enablers including supercomputing, AI, bioinformatics, and reagent ecosystems
   - National frameworks for genomic data storage and cybersecurity.

8. **Fostering Innovation: Public-Private Partnerships and Research Commercialization**
   - Collaboration models between academia, startups, and industry.
   - Financing mechanisms, IP frameworks, and incubation of biotech ventures.

5. Target Audience

- Central and state government officials
- Regulatory bodies (ICMR, DBT, CDSCO, etc.)
- Academic and research institutions
- Biotech and pharmaceutical companies
- Hospitals and clinical research organizations
- Genomic startups and health-tech innovators
- Investors, venture capitalists, and accelerators
- International agencies and science diplomats
- Legal, data governance, and bioethics experts
- Students, scholars, and skill development agencies

6. Key Highlights

ENGAGING PANEL

TECH TALKS

NETWORKING & COLLABORATION

GLOBAL & NATIONAL CASE STUDIES

POST SUMMIT COLLABORATION AND VISIT

7. Why participate

- ✓ **Be at the forefront** of India's emerging genomics and biotech transformation.
- ✓ **Gain critical insights** into scientific breakthroughs, policy shifts, and investment trends.
- ✓ **Meet thought leaders** from across the globe and initiate impactful partnerships.
- ✓ **Explore funding and market access** opportunities for startups and researchers.
- ✓ **Shape the discourse** around ethical and inclusive innovation in genomic science.

8. Expected Outcomes

- Development of an **India Genomics Innovation Roadmap**.
- **Recommendations for genomic R&D policy frameworks** and regulatory standards.
- Launch of **collaborative initiatives** across industry, academia, and public sector.
- Mobilization of **investments in genomic startups and infrastructure**.
- Strengthened **regional and global cooperation** on data exchange and skill building.

9. Conclusion

The **Global Genomics Summit 2025** will serve as a strategic and inclusive platform to champion the genomic revolution in India. As we enter a future shaped by biology, data, and innovation, genomics will remain central to building healthier societies, resilient economies, and sustainable ecosystems.

CII invites all stakeholders to join this landmark initiative and contribute towards *"Decoding the Future"*—where science meets policy, innovation meets opportunity, and India rises as a global leader in genomics.