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FinBioFAB - Finnish Biofoundry for Advanced Biomanufacturing

Yvonne Nyg ård
Neste Veturi final event

07/05/2025 VTT – beyond the obvious

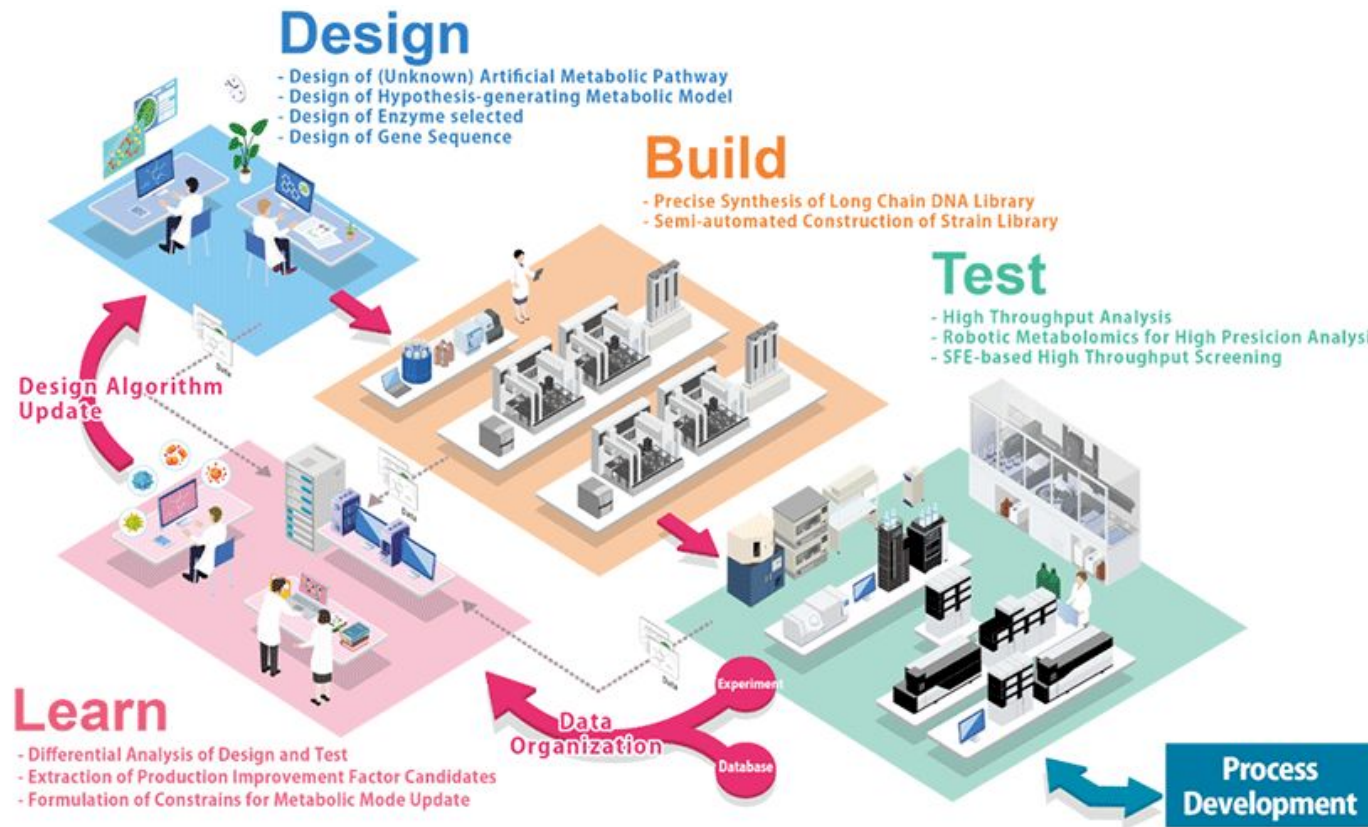
FinBioFAB - Finnish Biofoundry for Advanced Biomanufacturing

- A biofoundry is a facility that enables rapid and high-throughput design, construction, and testing of engineered organisms or bioprocesses.
- A biofoundry transforms biomanufacturing by enabling faster, cheaper, and predictable from-design-to-production processes.
- Material proteins and PHAs as test cases in FinBioFAB



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Automation and integration with AI



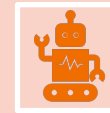
Design – Software: BioCAD, bioinformatics, biodata mining, biological understanding, modelling



Build – Physical: Synthetic DNA, parts, automation, multiplexing, plasmid to genome scale



Test – Physical: characterization, bio-analytics, omics, automation, high-throughput, Process Analytics Technology



Learn – Software: Data management, ML/AI, DoE, modelling



Outcome: Design rules for engineering living organisms and using them in a bioprocess

GCBA – Global Center for Biofoundry Applications 2025-2029

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Aims to create Standards & Metrics as tools for Reliability & Scalability



The Illinois Biological
Foundry for Advanced
Biomanufacturing



Korea National
Biofoundry



Common understanding

- Term & definitions
- Reporting
- Certificate of analysis
- Labeling



Common practices

- Analytical method
- Manufacturing processes
- Data analysis
- Others



Platforms & common parts

- Producer cells
- Vectors
- Media
- Tools & Equipment



Reference materials & data

- Calibrators
- Reference controls
- QC standards
- Database



Management systems

- Quality management
- Risk management
- Cybersecurity
- Supply chain

With thanks to Sheng Lin-Gibson, NIST