



# Designing for life and death decisions

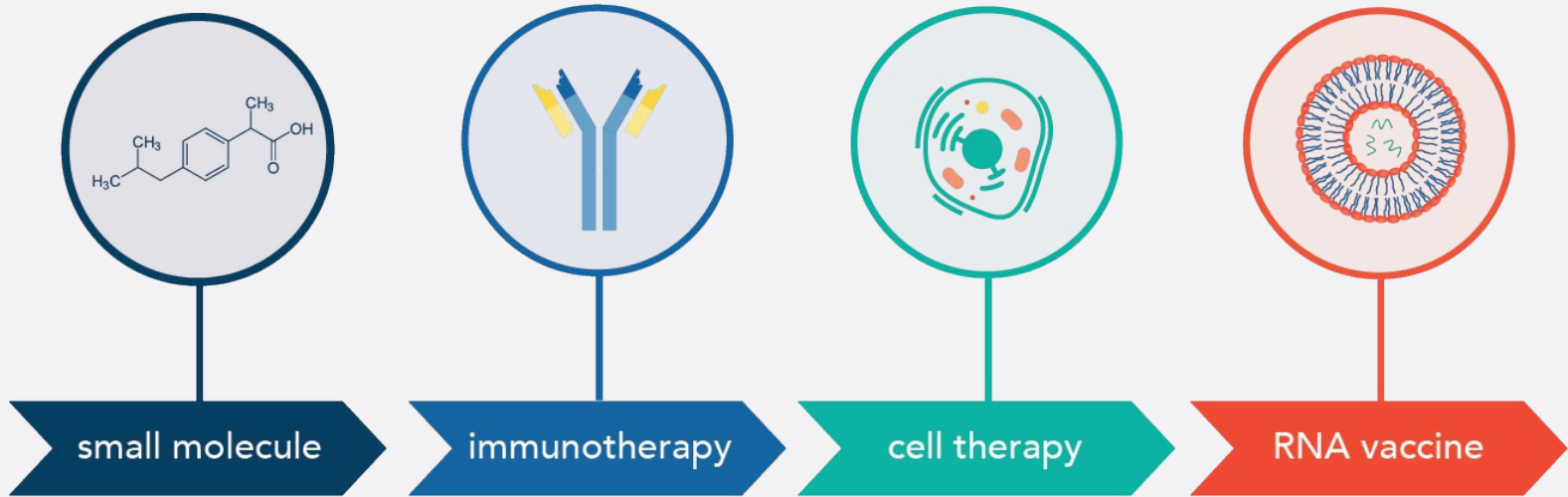
Building data products for biopharma operations

**Clare Gollnick**

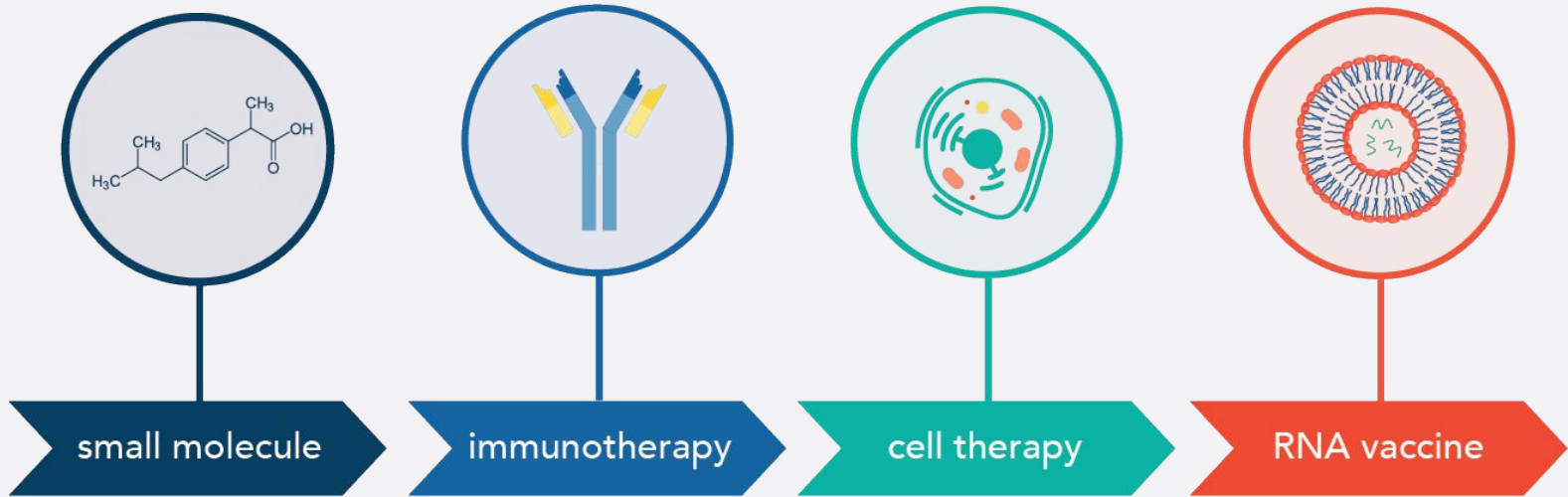
Co-Founder and CTO

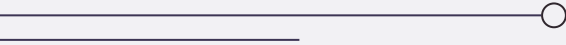
PhD, Biomedical Engineering

# Simplifying Access to Biomanufacturing Data




Is this batch of drugs safe for release to patients?





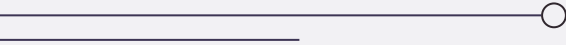
Data is objective. (?)






Data can sometimes be objective,

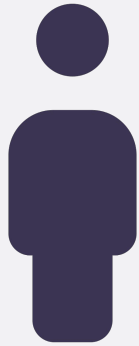




Data can sometimes be objective,  
**if all stakeholders agree on the objective.**



Agreeing on the benefits is not enough.  
Stakeholders must also agree on the **cost of failures**.



Optimal Individual  
Outcome



Collective Good

Data is a tool for  
*different* stakeholders to meet *different* objectives.

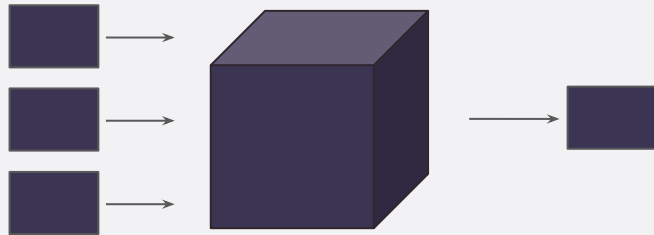




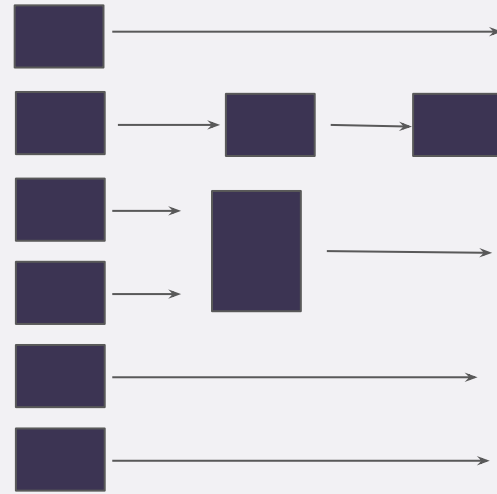
## Data cleaning algorithms should:

- ✓ Fail visibly, often intentionally
- ✓ Be auditable and correctable
- ✓ Allow for multiple perspectives

Fail Intentionally: Distributed pipelines limit the blast radius if an edge case causes an unexpected error



Centralized

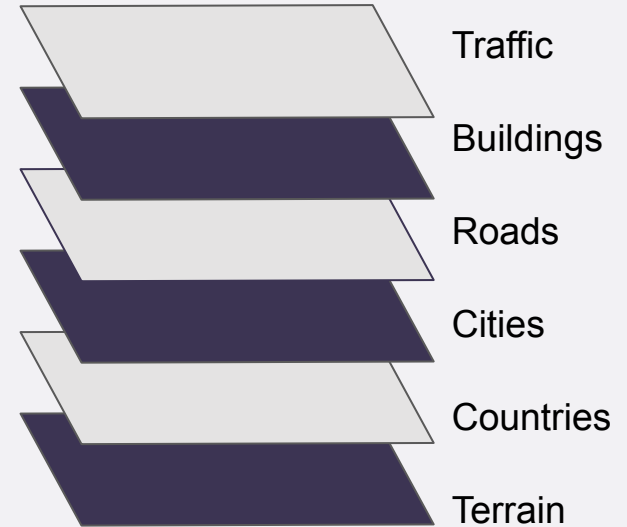


Distributed

# Be Auditable: A layered data model allow experts to make domain-specific corrections



"Floating Garden (空中庭園展望台)" by [wkc.1](#) is marked with [CC BY 2.0](#).









# Fathom's perspective on data and data architecture

- Data is a tool to achieve a specific objective. It is not inherently objective.
- Algorithms always make mistakes. Data products should reflect that.
- Understanding the cost of a failure is often a foundational product question.
- Be open to keep multiple copies of the same data – it's just different perspectives on the same world.