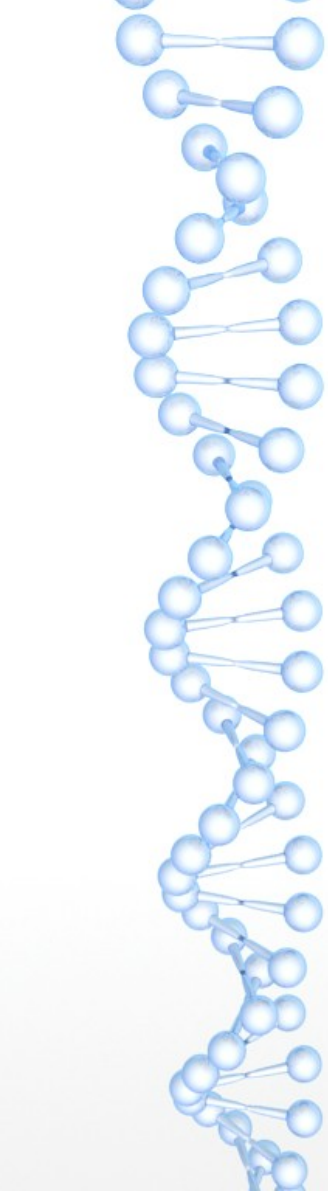


Ontology Summit 2023

Helping scientific researchers make better use of ontologies: Tools, Methods and Best Practices

First Panel

Some Context by Co-Chair Gary Berg-Cross

The OBO Foundry **Community**

A community of ontology developers committed to developing a **library of ontologies** that are:

- **open, interoperable ontologies,**
- **logically well-formed and**
- **scientifically accurate**.

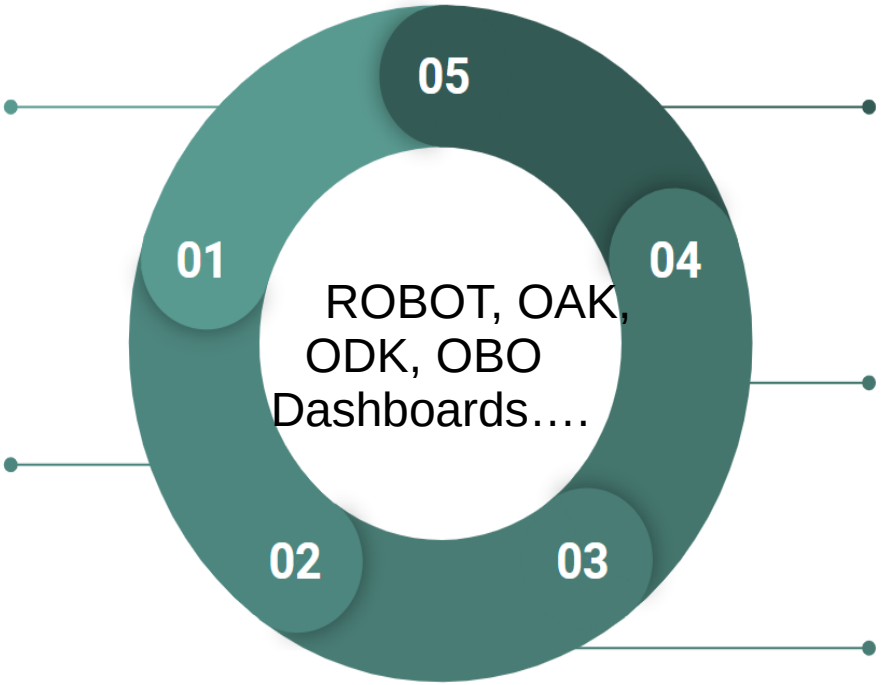
OBO Foundry participants follow and contribute to the development of an evolving set of **principles** including

- open use,
- **collaborative** development,
- **non-overlapping and strictly-scoped content**, and
- **common** syntax and **relations**,
- based on ontology models that **work well**, such as the Gene Ontology (GO).

Share Practices & Use Tools to Automate Repetitive Tasks for OBO Sphere Roles:

Database Curator:
annotating datasets, experiments and publications, requesting new terms from ontologies, suggest corrections to existing ontologies

Ontology Curator:
developing and maintaining ontologies, adding terms to ontologies (and other changes),, managing ontology releases



Semantic Software Engineer
building widgets that exploit the logical and graph structure of ontologies, for example phenotypic profile matching; building ontology term browsers such as OLS.

Semantic ETL Engineer:
building ingests from public life science resources; glue together data from different sources; augment your the information in your data sources through inference

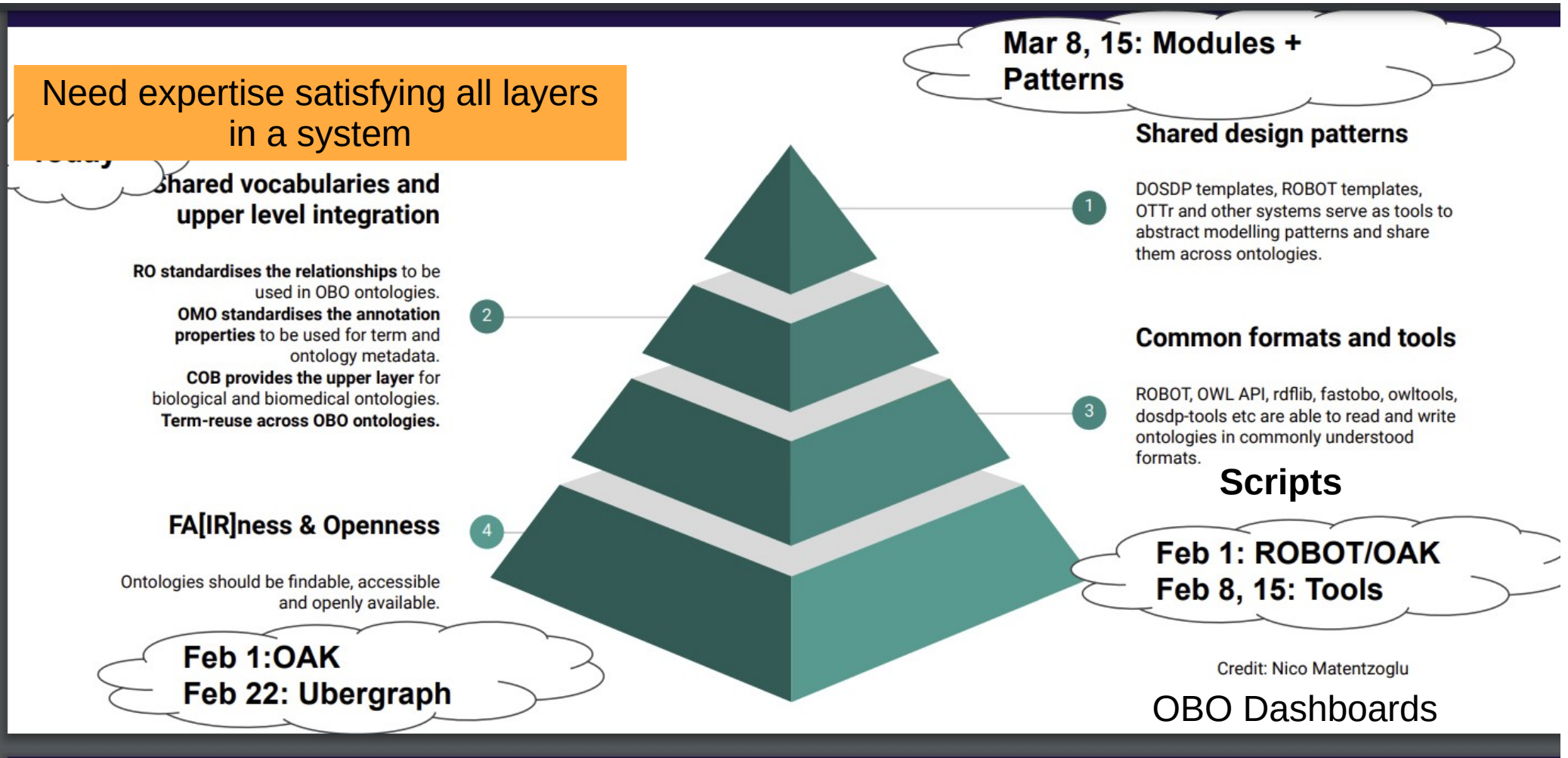
Ontology Pipeline Specialist:
developing ontology pipelines with make and ROBOT, building the release and quality control architecture, building infrastructure for application ontologies, implementing dynamic imports modules, transformations of and mappings to other ontologies.

Ontology Engineer/Developer:
developing design patterns for ontologies, specifying the logical structure of terms, responsible for ensuring the specification and

Also Scientists and Researchers

Interoperability Overview from Nico's Slide (What about interoperability outside the OBO Foundry?)

Need expertise satisfying all layers in a system



Credit: Nico Matentzoglu

OBO Dashboards

Standardising bottom-up is a very hard task

- The **OBO Foundry is fundamentally bottom-up:** we provide recommendations, but then it is up to the community to implement or reject them
- It is **hard to reach any degree of agreement** in a diverse culture like ours:
  - What belongs in COB? Measurement? Measurement Datum? Measurement Datum Recording Medium?
  - How should we encode synonyms?
- To satisfy some of the layers **requires a very high level of expertise**:
  - Shared design patterns require deep knowledge of OWL and template systems
  - Re-using shared vocabularies requires knowledge about ontology pipelines and OWL semantics
- It is very difficult and costly to determine whether any given ontology implements the recommendations.

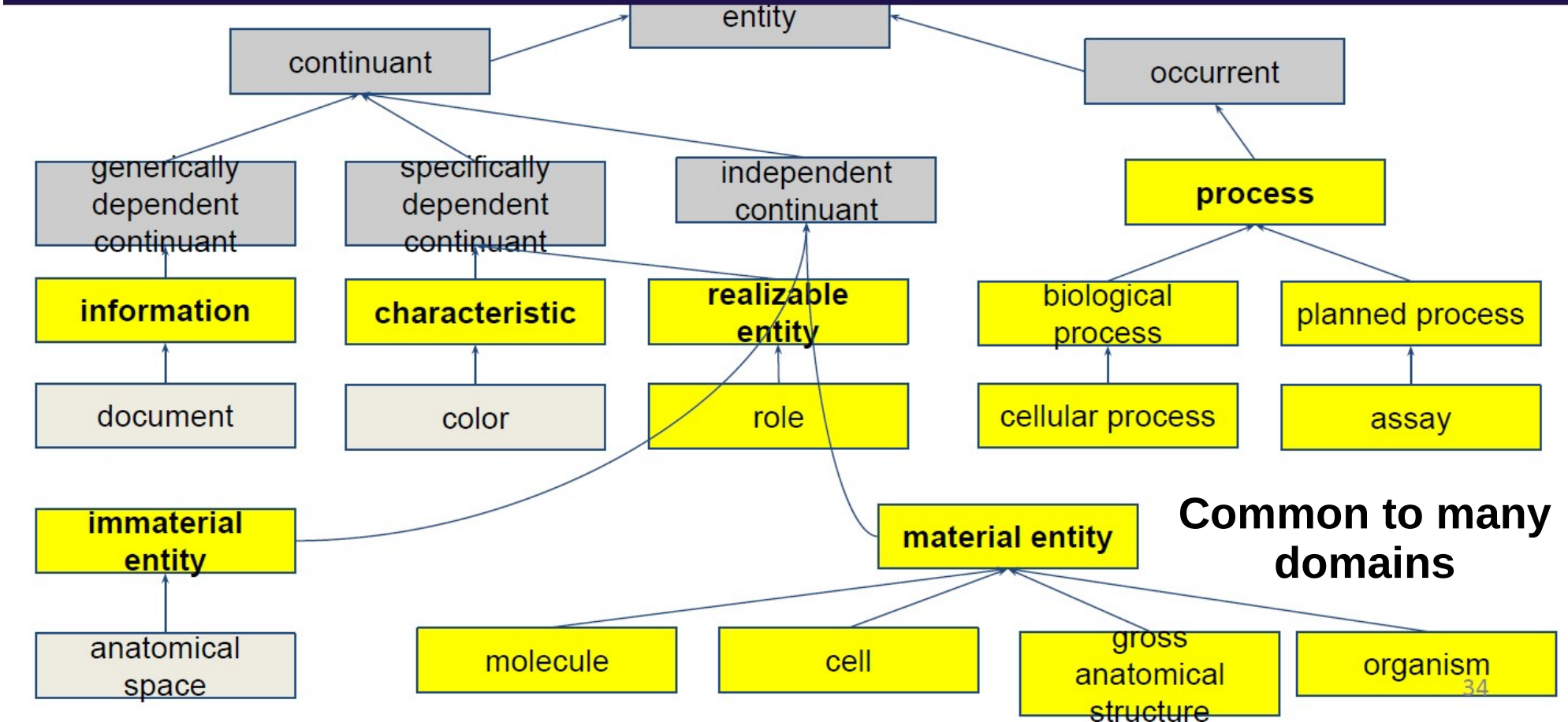
Desiderata for a biological upper core

- should provide a **parent to every OBO ontology class**
- should be anchored in BFO, but **hide its complexity from end-users**
- should include **logical axioms** that make inconsistencies within and between ontologies apparent through reasoning



What is the relation of COB to other domain upper cores?

COB and BFO


entity
continuant
occurrent
generically dependent continuant
specifically dependent continuant
independent continuant
process
information
characteristic
realizable entity
biological process
planned process
document
color
role
cellular process
assay
immaterial entity
material entity
Common to many domains
anatomical space
molecule
cell
gross anatomical structure
organism

Second Part of the Summit Schedule

The second half branches out to other communities, disciplines and practices such as modular approaches to ontology development.

- 2023 03 08 Modules and Patterns - Cogan Shimizu
- 2023 03 15 Design Patterns - TBD, Valentina Presutti invited

  2023 03 22 Wikidata
- 2023 03 29 Ontology Development Martin Skjæveland
- 2023 04 05 Science of Schema.org Adan Sheperd
- 2023 04 12 2nd Panel (Pascal Hitzler & TBDss)
- 2023 04 19 -2023 04 26 Synthesis sessions
- 2023 05 03 Communiqué development