

# HBGD Ontology Development

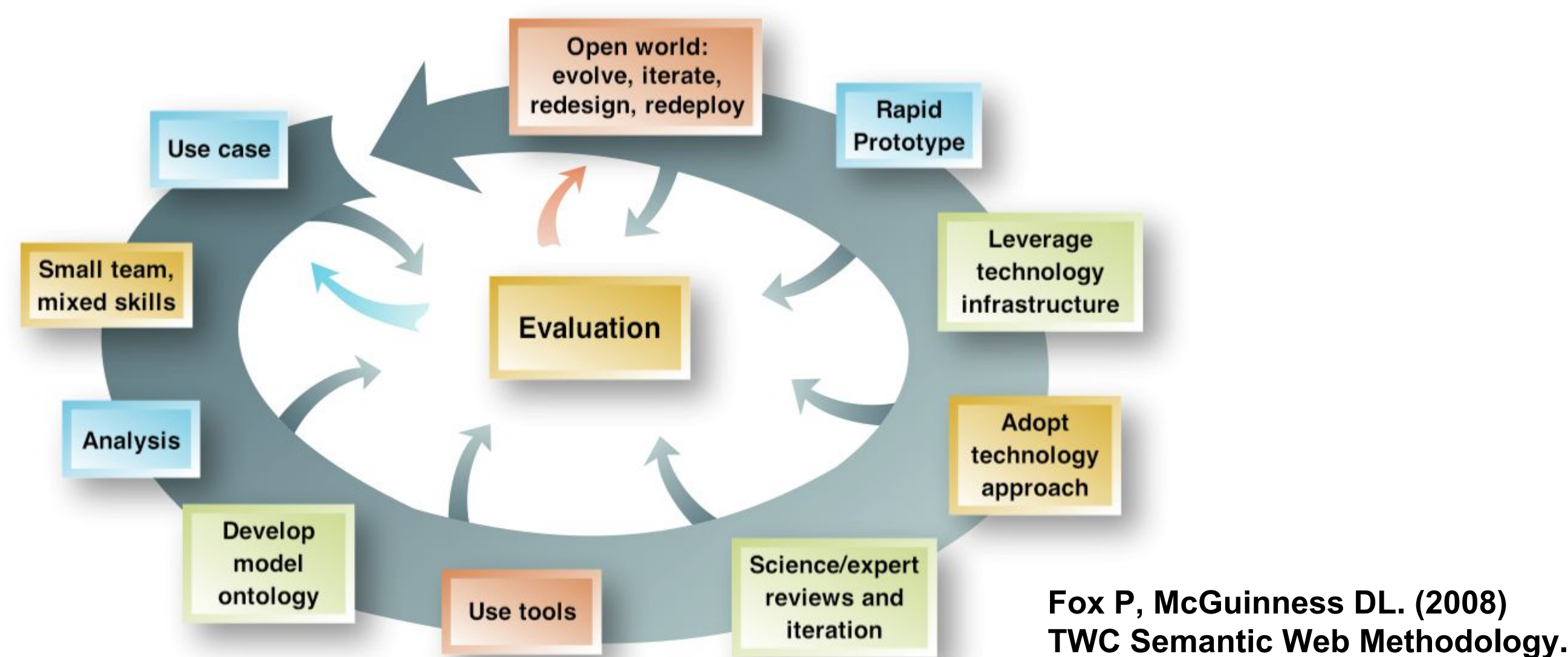
## Healthy Birth, Growth, and Development Program HBGD-Knowledge Integration: Knowledge Translation Surge Team



HBGD Ontology provides standards for vocabulary, term definitions, and semantics for global studies of child growth and neurocognitive development.

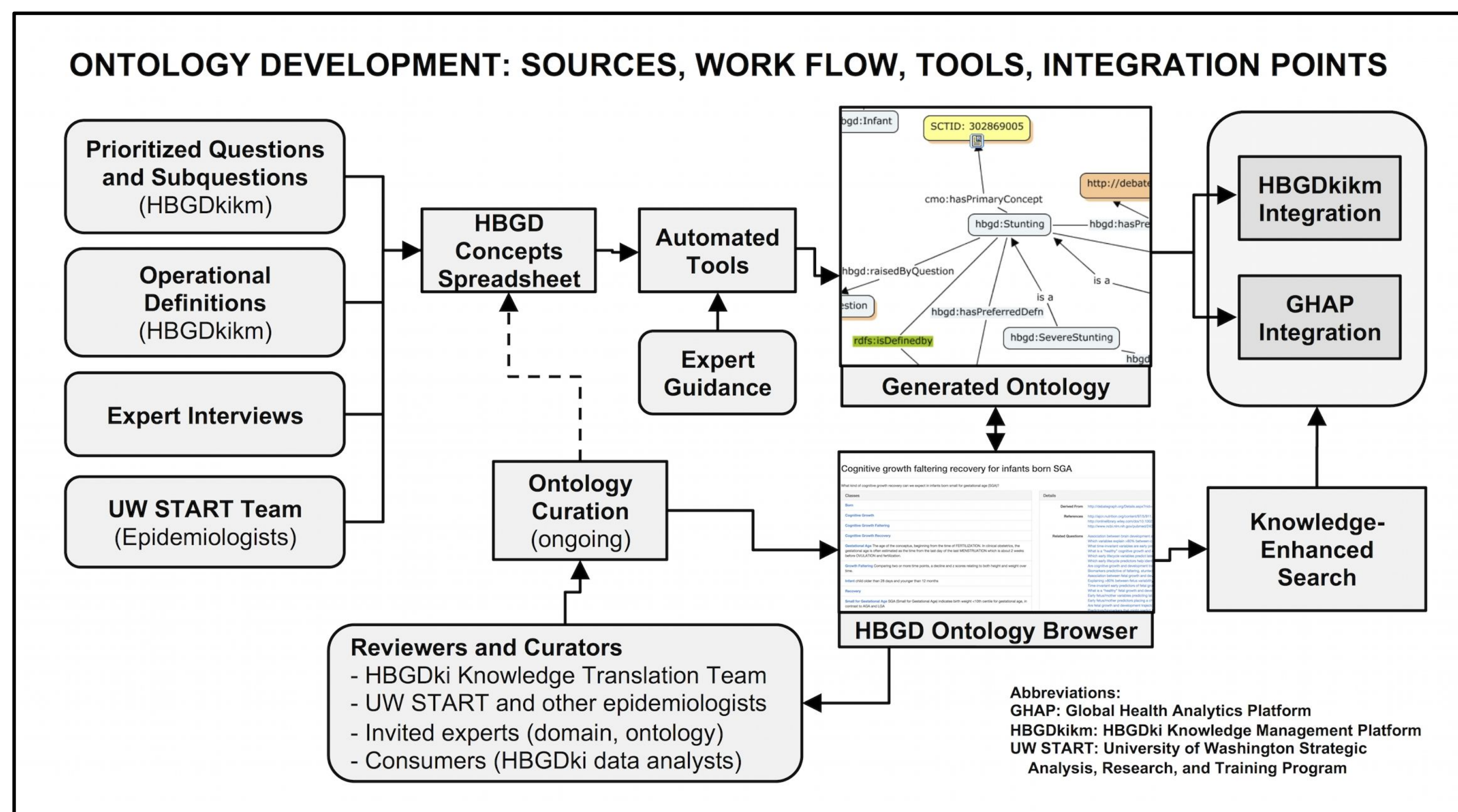
### PURPOSE

- The HBGDki mission is to eliminate growth faltering and impaired neurodevelopment globally by transforming data to insights to action.
- In deep data integration, an ontology (controlled vocabulary with specific term definitions) is important to enable integration of data sets that use different definitions for similar variables.
- We developed an ontology for birth, growth, and neurocognitive development with controlled vocabulary, term definitions, and semantics.



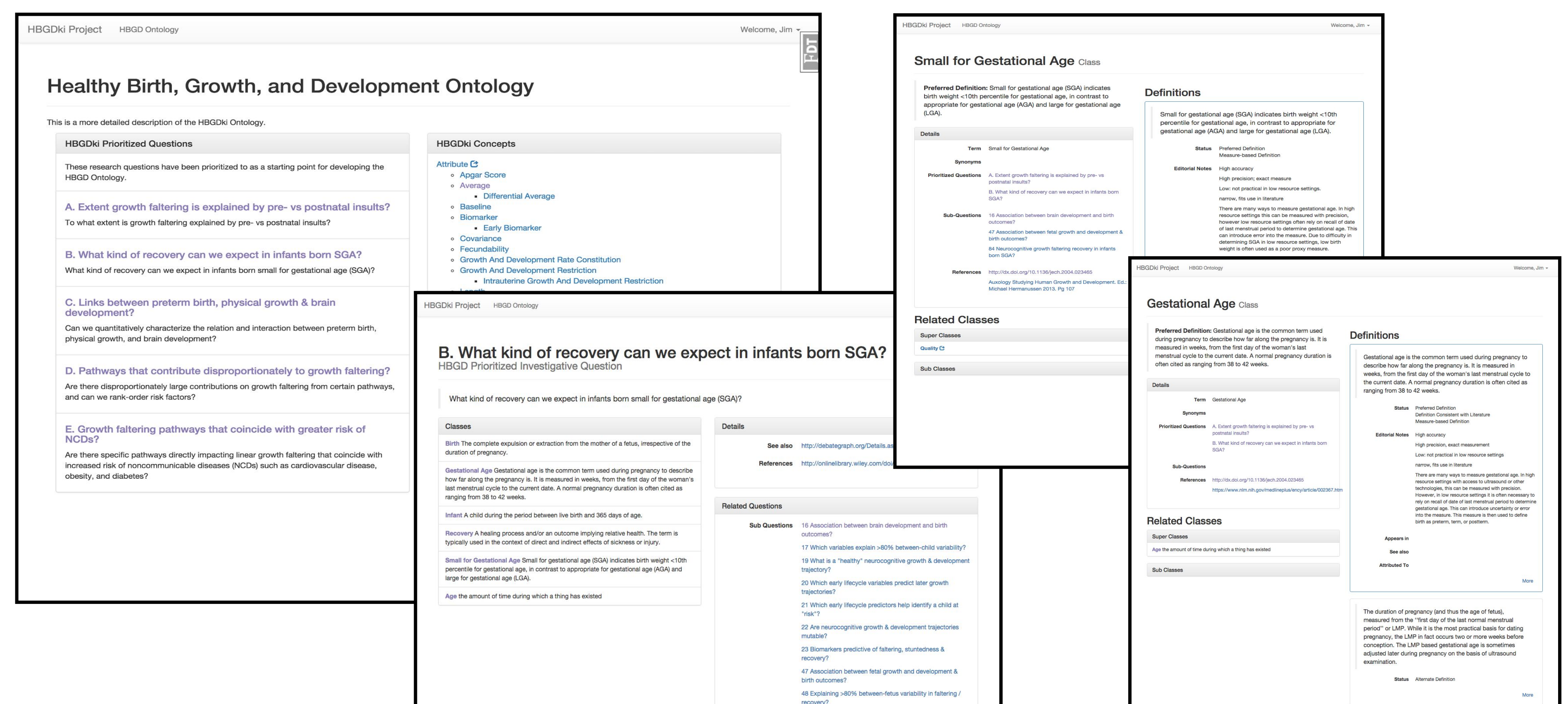
### METHODS

- Key terms taken from HBGDki questions, program members, and previous studies
- Tools developed to generate and curate ontology
- Ontology reviewed and iterated
- Tools developed to browse, search, review ontology



### RESULTS

- 438 classes (288 classes [64%] with definitions)
- Subclass connections
  - 27 classes have 1 subclass
  - 39 classes have 2-5 subclasses
  - 7 classes have 6-10 subclasses
  - 1 class has > 11 subclasses



### NEXT STEPS

#### Evolution

- Add updated HBGDki subquestions
- Expert interviews
- Augment vocabulary

#### Curation

- Review by epidemiologists, domain experts, invited ontologists
- Define ontology review work flow
- Data analyst review for usability
- Onboard new ontology source material (questions, definitions)

#### Tool Development

- Improved faceted browser interface
- Ontology review work flow within browser
- Knowledge-enhanced search
- Automated tools

#### HBGDki Platform Integration

- HBGDki-Knowledge Management (kikm)
  - Automated embedded semantic markup to sync with ontology
- Global Health Analytics Platform
  - Add semantically enhanced, machine-readable data description files