

MASTERS FINAL ORAL EXAMINATION

**Wednesday, November 16th
10:00a.m. @ 131 Atanasoff**

Shivan Gunda

Major Professor: David Fernandez-Baca and Steve Cannon

Ontology Search

In the later part of 18th century, Gregor Mendel, who is also known as the father of genetics, worked on pea plant and showed that many of the traits which are inherited follow certain laws. His work was not widely recognized until the 20th century. There has been a lot of research going on in the field of crop genetics. There are two broad approaches to genetic data: genetic, involving measurements of recombining chromosomes, and genomic, involving the genome sequence of chromosomes. The genetic or statistical or logical information about traits can be stored as QTL (quantitative trait loci), whereas the genomic research provides information about gene structure, location, and function, represented as gene models. Together, the gene models and QTL provide a researcher information about the approximate location of the loci which may be responsible for certain plant characteristics.

The current data searches rely on text matching of names and description of these data objects. an ontology is a representation of various kinds of entities that exist in a particular domain and the relationships between those entities, they are directed acyclic graph like structures that can be used to describe traits, gene functions and relations among them. The Ontology Search takes the advantage of such ontologies to improve the searching of QTL and gene models.

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