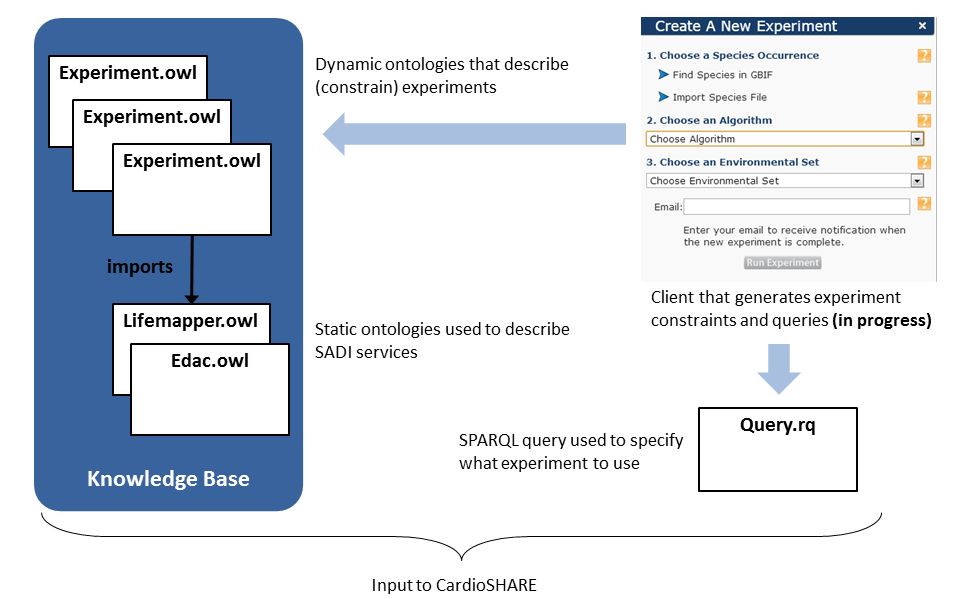
# Goal

To demonstrate how semantic technologies can be used to streamline data from EDAC to Lifemapper

# Semantic Infrastructure



# Experiment.owl

An experiment in ELSeWeb is an ontology that specifies:

* Species occurrence set
* Lifemapper modeling algorithm to employ
* Environmental Scenario Layerset

In particular, the layerset is a stack of EDAC (or any) WCS coverage data. An experiment specifies the “relevant” data layers using OWL restrictions, for example data that:

* is sourced from MODIS or PRISM
* is of type Fractional Snow Cover or Minimum Temperature Normals
* has a certain spatial region (e.g., between -109 and -106 longitude)
* has a certain duration (e.g., between December 1981 and December 2010)

# Demo Experiments

## Experiment Example: MODIS Data

Experiment Description:

* **Location:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/rdf/ontology/experiments/experiment-1.owl>
* **Algorithm:** BIOCLIM
* **Occurrence Set ID:** 4024107
* **Scenario Layers:** any data sourced from MODIS (e.g., hasSource value MODIS)
* **Initiation query:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/sparql/query-experiment-1.rq>

## Experiment Example: PRISM Data

Experiment Description:

* **Location:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/rdf/ontology/experiments/experiment-2.owl>
* **Algorithm:** BIOCLIM
* **Occurrence Set ID:** 4024107
* **Scenario Layers:** any data sourced from PRISM (e.g., hasSource value PRISM)
* **Initiation query:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/sparql/query-experiment-2.rq>

## Experiment Example: MODIS Data within a given region

Experiment Description:

* **Location:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/rdf/ontology/experiments/experiment-3.owl>
* **Algorithm:** BIOCLIM
* **Occurrence Set ID:** 4024107
* **Scenario Layers:** any data that is sourced from MODIS and falls within a certain region (e.g., (hasLeftLongitude some int[>= -108]) and (hasLowerLatitude some int[>= 34]) and (hasRightLongitude some int[<= -104]) and (hasUpperLatitude some int[<= 39])and (hasSource value MODIS)
* **Initiation query:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/sparql/query-experiment-3.rq>

## Experiment Example: Minimum Temperature Normals

Experiment Description:

* **Location:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/rdf/ontology/experiments/experiment-4.owl>
* **Algorithm:** BIOCLIM
* **Occurrence Set ID:** 4024107
* **Scenario Layers:** any data that is of type MinTemperatureNormals (e.g., equivalentClass MinTemperatureNormals)
* **Initiation query:** <https://raw.github.com/nicholasdelrio/ELSeWeb/master/documents/semantic-web/sparql/query-experiment-4.rq>

# Running an Experiment

1. Login to Lifemapper to get session cookie ([http://lifemapper.org/login](https://bluprd0512.outlook.com/owa/redir.aspx?C=fn17A768WUWUooblFwFk3rHeN-GI7c8IBqAWhedTLGnivXrTfnR9tccp9e0ev9xN9mTFVGkq3WY.&URL=http%3a%2f%2flifemapper.org%2flogin))
2. Choose an experiment
3. Copy the initiation query
4. Paste the query into the ELSeWeb cardioSHARE instance (<http://iw.cs.utep.edu/cardioSHARE/>)
5. Click Run
6. On the results segment of the query execution, click on the “modelURL” link