1. We know that with anthropogenic change comes increases in seasonal variation, climate change.
   * Winter temperatures are getting warmer and there is more temperature variation during the spring and summer, the seasonal shoulders.
2. Climate change presents a problem as most insects spend winter in a state of dormancy, diapause.
   * Warmer winter temperatures during diapause will increase the energetic demand on these insects, reducing energy storage.
   * Reduced energy stores during winter cannot be replenished.
3. Warmer winter temperatures could limit insect population.
   * Climate change = warmer winters
   * warmer winter = diapause during warmer temps
   * warmer temps = insects exposed to increased energy drain
   * As winter warms diapause could require more energy/food to survive.
4. ECB could be a model to understanding how insects build up larger reserves to survive diapause, because
   * ECB has at least two naturally segregating, genetically different strains
   * ECB strains have genetically different diapause lengths
   * ECB strains enter diapause at different times
5. Comparing the long diapause and short diapause genotypes could explain how animals build up energy to survive a longer and warmer diapause.
   * Long diapause ECB enter diapause earlier in the season while temps are warmer
   * Long diapause ECB remain in diapause longer then their shorter diapausing counterparts.
6. Because ECB has to survive a longer, warmer diapause period I predict the long diapause ECB strain will increase their nutrient stores.
7. I found longer diapause ECB genotype produces larvae that are larger and that have greater fat reserves compared to the short diapause strain of ECB. I believe the increased fat reserves are key to the long diapause strain surviving the longer warmer diapause.
8. It is my prediction that as temperatures continue to increase selection will favor those insects best able to increase energy stores, much like the long diapause ECB