***Exploring how climate will impact plant-insect distributions***

***and interactions using open data and informatics***

**SP-4: Presentation of Project and Results**

**- Instructions and Assignment -**

**Brief Summary:** To date, your group has examined a butterfly-host plant interaction by researching the natural history of both plant and insect partner, generated occurrence maps, SDM maps and projections SDM for 2070, and evaluated a hypothesis related to the impact of climate change on species distributions and plant-insect interactions. In this presentation, you will have the opportunity to present this work, and discuss your findings with respect to your understanding of the plant-insect interaction.

**Learning Goals & Objectives:**

1. Communicate your findings in the form of an oral presentation
   1. Describe the natural history of your butterfly-host plant interaction
   2. Infer present and future species distributions using SDMs
   3. Evaluate the hypothesis using data generated during the project
   4. Interpret findings in the context of the natural history of your butterfly-host plant interaction and climate change

**Instructions:**

***Preparing the Presentation:***

For this assignment, you will prepare an 8-10 minute presentation on your group project followed by a few minutes of questions. It is expected that all group members contribute to the development of the presentation and that the presentation is divided equally among group members. All group members should be equally knowledgeable about all aspects of the presentation.

***Guidelines for your presentation:***

* Your presentation should include an introduction and background to the natural history of the butterfly-host plant interaction. Are there any particularly noteworthy features of this interaction that might be especially vulnerable to changes in climate? Although you selected one host plant to study, what does the entire picture of host plants look like? Do any aspects of the biology of this butterfly-host plant interaction effect the hypothesis you developed?
* Presentation of both observation maps and SDM for butterfly, host plant, and both butterfly and host plant. Provide a qualitative description of the maps and an assessment of the overlap between them.
* Present and discuss your hypothesis – provide some rationale, don’t just restate it.
* Describe data collection methods, and 2070 SDM analyses. Provide a quantitative and qualitative description of the change in the species distribution as well as the overlap between butterfly and host plant.
* Evaluate your hypothesis using the data you collected.
* Interpret your hypothesis
* Discuss significance and future work. Consider:
  + Discuss your findings with respect to the published literature and be sure to draw connections between the data you collected and your hypothesis, and original question.
  + What type of data would help you refine your models? (Consider mechanistic versus correlative models)
  + What assumptions did you make or limitations did you come across to the data you collected?
  + Address the impact of the study and the relevance to plant-insect interactions at large.

***Must haves:***

* Observation maps for butterfly and host plant separately
* SDM maps for butterfly, host plant, and butterfly-host plant combined
* 2070 SDM maps for butterfly-host plant combined (butterfly and host-plant optional)
* Hypothesis