# Creating Open Educational Resources (OER) Materials for Entomology Classes
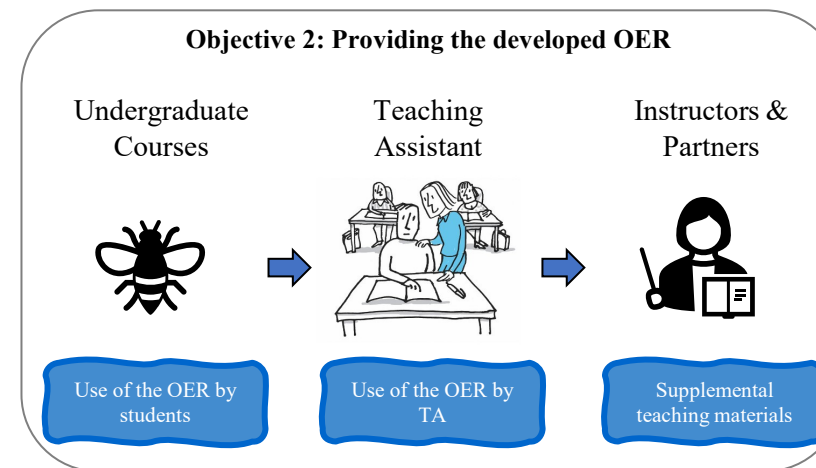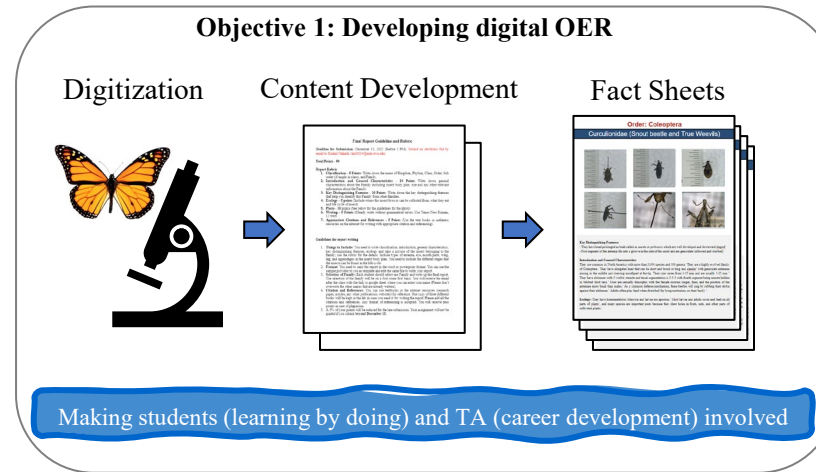
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## INTRODUCTION & JUSTIFICATION

The entomology classes at West Virginia University (WVU) currently rely on digital insect images procured from various websites. However, using such images online presents some difficulties. Firstly, there are errors in the identification of the insects and the information provided about them may not be entirely accurate. Secondly, obtaining permission to use these images for classroom instruction is challenging. Thirdly, many of the available insect images on the Internet are not pertinent to the region of West Virginia. To overcome these challenges, a new project has been initiated to develop Open Educational Resources (OER) materials specifically for instructors and students teaching and taking entomology classes, respectively. The OER materials have been designed to be easily accessible and are tailored to the insects found in West Virginia. This initiative will allow students to learn about insects collected and identified in the classes while enabling instructors to teach about them without copyright infringement concerns or the limitations posed by existing field guidebooks.

## GOAL & OBJECTIVES

The goal of this project is to create new OER and digital reference materials that can be utilized for laboratory and coursework in the field of Entomology and its related disciplines at WVU. This project has two primary objectives: (1) to develop OER materials that can replace the field guidebooks frequently purchased by students in entomology classes and (2) to publish the newly-created OER materials on different platforms, including Pressbooks®. See the figures on the right for detailed information on the project process and outcomes.

### Objective 1: Developing digital OER

Digitization → Content Development → Fact Sheets

Making students (learning by doing) and TA (career development) involved

### Objective 2: Providing the developed OER

Undergraduate Courses → Teaching Assistant → Instructors & Partners

Use of the OER by students

Use of the OER by TA

Supplemental teaching materials

## PARTICIPATIONS OF STUDENTS

This project includes multiple internal partnerships with students (both graduate and undergraduate students) and instructors. The instructors are included because they will be one of the two main target audience groups who use the OER materials that will be developed from this project. The project incorporated the development of OER into both graduate and undergraduate courses, requiring students to generate a fact sheet for each insect, providing them with a learning-by-doing opportunity to learn about insects. In the fall semester of 2022, OER materials were developed as part of a class project, with the information sheets created by students subjected to a rigorous review process to ensure their accuracy. Currently, the project has seen the participation of 26 undergraduate students and one graduate student (TA).

## ENVISIONED USES & FUTURE STEPS

Given the high number of insect species existing in West Virginia, the development of OER will continue beyond the current project period. We will work closely with instructors to generate a comprehensive list of insect species that can be added to entomology and related courses. The OER materials created will be shared with external partnerships, including the USDA Forest Service, state agencies, National Plant Diagnostics Network (NPDN), WVU Extension Services, and National Insect Collection Network. These organizations will serve as primary users of the developed materials for their public outreach programs, and we will solicit feedback from them to ensure the accuracy and usefulness of the OER materials. Additionally, K-12 educators across the state can benefit from these resources as they have been developed specifically for the Appalachian Region, making them more relevant and applicable than other insect examples from outside the region.

*Questions? Please contact me at yopark@mail.wvu.edu*