**Food packaging design competition (1 hour)**

**Summary:** After learning about the challenges associated with sustainable design of packaging, we will ask the teams to design new, sustainable packaging for their favorite snack.  They will prototype their design using any of the available materials, and create a pitch to give to the judges (us).  We should have a rubric which we can also show to them on aspects of the design such as sustainability of raw materials, ability to maintain proper barrier function, ease of use, and end of life plan.  Need to think about what sort of raw materials would be best suited.

**ILOs:**

1. List key attributes of successful product packaging
2. Create a workable prototype from limited materials
3. Ideate multiple design options and evaluate based on requirements

**Equipment list:**

* Cardboard boxes
* Gardening twine
* Wood
* Starch (compostable) packing peanuts
* Scissors
* Biodegradable tape
* Any other supplies that may be interesting (can provide synthetic materials and penalize their use for added challenge)

**Intro:**

Many of the current problems associated with food packaging are associated with the issues arising from plastics. Much food packaging uses a high quantity of plastic which does not break down easily in the environment. Often, plastic is not disposed of properly, and it finds its way into landfills where it takes a long time to decompose.

One way we can remedy this is using more compostable materials. Compostable means that something is made out of organic matter and able to break back down into organic matter under the correct heat and moisture conditions. When materials are compostable, they can return to organic matter in a more natural way. The goal of this activity is to get skilled at identifying compostable materials that are around and figure out ways to combine them to make a structurally sound package.

**Procedure:**

1. Find materials. We’ll have available raw materials to choose from, including \*materials list\*.
2. Assemble the food packaging design. This should include 3 important functions: 1) a way for the food to remain airtight/mildly temperature regulated depending on the snack, 2) a way for the food to be sealed, 3) a way for the food to be opened.
3. Judging happens!

**Analysis:**

The food packaging designs that are the most positive for the environment are likely compostable packages. In the judging process, we should be looking for which groups attempted to bring in the best materials for the environment and combine them in a way which considered the function of the snack packaging.

**Discussion questions/debrief:**

* Group Debrief
  + Which materials did you use to make your package?
  + How did you go about identifying that those were compostable/had the least plastic content?
  + Do you have any ideas for what people in industry might use for the package (i.e. what would you need to make a better package)?
* Class Debrief (Ideally, choose someone in the group who hasn’t been speaking up as much to promote building confidence
  + How did you design your package to protect food/keep it safe?
  + How did you decide which materials to use?
  + Brief open comment/question section on each group’s box

**Lab handout needed?**

No – but we recommend outlining the parameters you will use to judge the competition. For example, if you provide synthetic materials, using “sustainability” as a judging parameter and penalizing the use of plastic may work.

**Additional Notes:** It can be fun to make the package an egg container and do an egg drop contest! In this case, add egg survival to your judging criteria.