

Strawberry DNA - Volunteer Handout

Before Experiment:

Introduction (slide 2):

- Introduce yourselves to the students:
 - Share name and pronouns. What is your major? What got you interested in studying STEM at UConn?
- (if time) play a quick icebreaker:
 - Have students share their name, pronouns, and what interests them the most about science/engineering

What is DNA? (slide 3):

- Questions: What do you already know about DNA? What does DNA look like?
 - Today you will be extracting DNA from strawberries!
 - Fun Fact: 60% of DNA found in strawberries is also present in humans!

Intro to Chemical Engineering (slide 4):

- How does this experiment relate to engineering?
 - Chemical engineers work in many different fields but must apply their knowledge of chemistry (including how DNA works and its function!) to perform their necessary jobs

Related Majors Offered at UConn (slide 5):

- Briefly summarize what chemical engineers and biomedical engineers do and how this relates to the experiment we are performing today
 - ~26% of chemical engineers in the US are female identifying
 - ~40% of biomedical engineers in the US are female identifying (which is around double the overall female engineering percentage)

She Did That (slide 6):

- Introduce Frances Hamilton Arnold and her accomplishments

Begin experiment with students

After the Experiment:

- Present the discussion questions (slide 8 of the presentation)
- Give the students a few minutes (if there is time) to discuss with one another to develop answers/ideas
 - If they don't have any answers, try asking more simple questions and/or giving some hints
- Go through each question and discuss why certain steps were needed for this experiment to be successful
 - Why did we need to mash the strawberries?
 - The mashing breaks the plants cell walls, causing material to leak out from the cytoplasm of the cell
 - Why do we need to filter the strawberry solution?
 - Filtering strains out the larger cellular components and the DNA, which is so small and tightly wound, can go through the filter

If time: Offer to answer any questions about being an engineering student, general questions about the STEM/engineering field, or any other questions