

FL VC IDN Summer 2020 Webinar Series

Strategies for Online and Remote Lab Courses

A Panel Discussion



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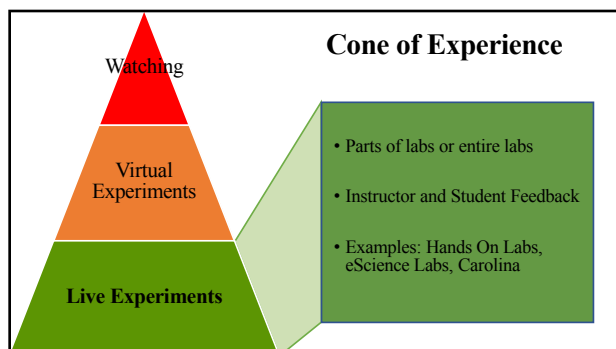
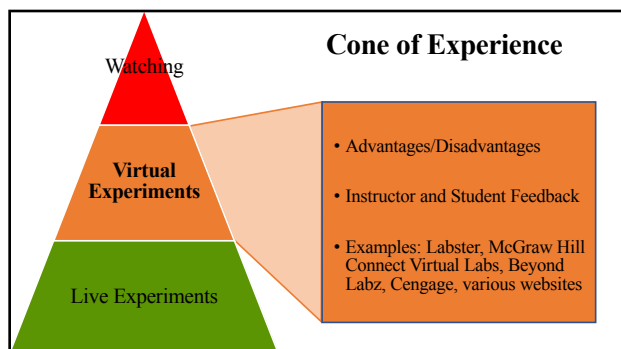
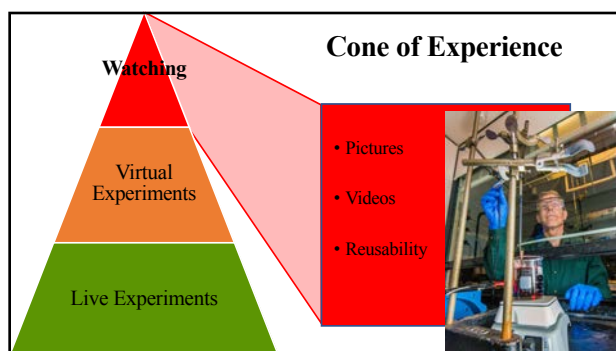
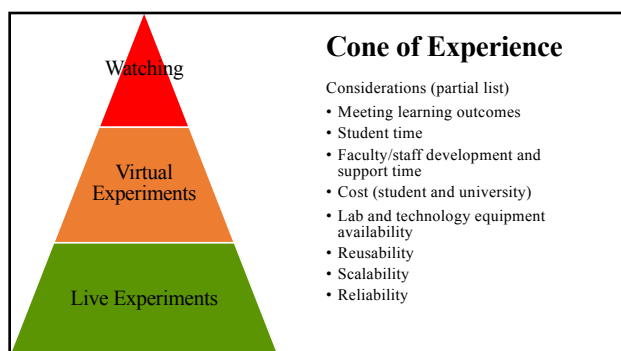
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Online Lab Development

Collaborative
Partnership between USF faculty and Innovative Education

Engaging
Self-Learning Design support for student self-paced instruction and custom content

Outcome Driven
Quality online learning focused on meeting student learning outcomes



USF Online STEM Labs - <https://youtu.be/h8DSeYcu1dc>



Faculty led multidisciplinary collaborative taskforce

- College of Arts and Sciences faculty & lab managers
- Innovative Education video production and learning designers
- Strategically prioritize shared resources (JoVE, Pivot, Labster, iNaturalist, custom video, kits)
- Establish a community of practice to access needs, solve instructional problems and make decisions

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Miami Dade College

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Discovering Resources both Internal & External

- LMS Administrators
- Technology Training team
- Librarians/Learning Resource Specialists
- Lab Managers/Faculty
- Publishers/Third Party Vendors



Discovering Resources both Internal & External
Auralia and Musition

An Introduction Video: <https://youtu.be/EX03-0mstJA>

Discovering Resources both Internal & External

iHuman

An Introduction Video: https://youtu.be/X_CvWIDcgy

Performance Overview

The screenshot shows the iHuman interface with a patient's medical history on the left, a central video player showing a hand being washed, and a performance overview table on the right. The table lists various skills and their completion status.

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Strategies for Online and Remote Lab Courses

Vicki Westergard
St. Petersburg College

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St. Petersburg College Virtual Labs Strategies

Online transitions were decentralized, leading to various solutions:

- Video demonstration - Ceramics <https://youtu.be/v9s511Gv5Q>
- FALSC resources - Jove for Biology <https://www.jove.com/db24.lincweb.org/science-education/basicbio>
- Microbiology – home lab kits
- Simulations - A&P Lab – in-house simulations
- [Live online guided dissection](#)

The screenshots show various virtual lab simulations, including a chemistry experiment with test tubes and a biology experiment with a microscope.

“Handwashing”

ACTIVITY POST - Handwashing

In the field of microbiology and in health care settings, handwashing is extremely important for health and safety of people in those areas. The importance of handwashing has been even more evident in the times that we are currently living in with COVID-19.

So HANDWASHING is this week's Activity assignment! You will need to create a FLYER or VIDEO on proper handwashing technique. The idea is the flyer or video could be shared with the general public to better educate them on CDC recommended guidelines for handwashing (see your Week 1.1 Lab Guide for details on those recommendations).

If you choose to create a flyer you can either:

- Draw something, take a picture of it and upload it to the associated Dropbox.
- Create a flyer in Word or PowerPoint (you can use any program you'd like but I can only open .doc, .docx, .ppt, .pptx, or .pdf files—so make sure it's in one of those formats) and upload it to the associated Dropbox.

If you choose to create a video:

- Please be sure to upload it to YouTube and provide me with a Public or Unlisted link (if you make it Private I won't be able to view it).
- Keep the video length to less than 2 minutes.

Keep all materials appropriate (no nudity, violence, cursing, etc.), but feel free to use props and/or ask family or friends to be a part of it.

NOTE: The information shared in the flyer or video should be based on CDC recommended guidelines and **MUST BE YOUR ORIGINAL WORK.** If you upload work that is not original you will not receive credit for the assignment and will be reported to the Academic Integrity Council.

Examples of Students' Work:

Handwashing

The 5 steps to remember every time you wash your hands!

1. Use an elbow and get your hands close to all 6 sides of the basin or soap dish.
2. Rub palms together in a circular motion for 10-15 seconds.
3. Rub the back of your right hand with the palm of your left hand and vice versa.
4. Rub the back of your left hand with the palm of your right hand and vice versa.
5. Rub the thumb of your right hand with the palm of your left hand and vice versa.

Always use hand sanitizer if washing your hands is not an option. Repeat steps hand sanitizer is a guarantee.

<https://www.youtube.com/watch?v=rzlm40X08&feature=share>

The screenshot shows a YouTube video player with a student demonstrating handwashing technique. The video title is "Handwashing technique".

“Staining Guides”

This week we will be learning about a variety of staining techniques commonly used in microbiology laboratories.

So, STAINING is this week's Activity assignment! CHOOSE ONE OF THE STAINING PROCEDURES (e.g. Gram stain, Capsule stain, etc.). You will then need to create a FLYER or VIDEO on your chosen staining technique. Your target audience is a fellow classmate who is struggling to remember the details of the procedure.

If you choose to create a flyer you can either:

- Draw something, take a picture of it and upload it to the associated Dropbox.
- Create a flyer in Word or PowerPoint (you can use any program you'd like but I can only open .doc, .docx, .ppt, .pptx, or .pdf files—so make sure it's in one of those formats) and upload it to the associated Dropbox.

If you choose to create a video:

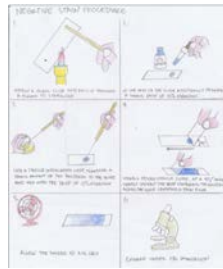
- Please be sure to upload it to YouTube and provide me with a Public or Unlisted link (if you make it Private I won't be able to view it).
- Keep the video length to less than 4 minutes.

Keep all materials appropriate (no nudity, violence, cursing, etc.), but feel free to use props and/or ask family or friends to be a part of it.

NOTE: The information shared in the flyer or video should be based on textbook guidelines and **MUST BE YOUR ORIGINAL WORK.** If you upload work that is not original you will not receive credit for the assignment and will be reported to the Academic Integrity Council.

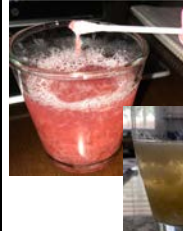
- Students obviously couldn't do the staining procedures in lab, so they were directed to read the text book, watch a demo and then create a “Staining Guide”

Examples of Students' Work:



"DNA Extraction"

Examples of student work



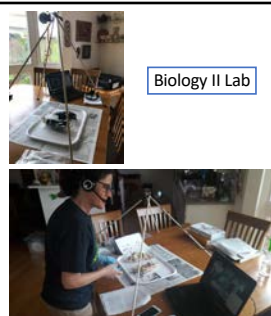
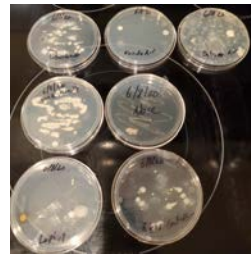
OBSERVING DNA IN FOOD
At home, you can extract DNA. The following instructions on how to make a living thing. It can easily be seen with the naked eye when collected from thousands of cells. This simple method allows you to extract DNA from a fruit and view it.

A quick overview of the process:
This will be involving your food sample in a Ziploc bag to manually tear breaking open the cells. You will then add a soap and salt mixture to your sample. The detergent disrupts the phospholipid plasma membrane and the nucleus of the cells. This allows for the release of the DNA from the cell. You will then add alcohol to the sample. The alcohol causes the DNA to precipitate in the solution and you will see the DNA form a stringy white substance.

Materials Needed
Food (e.g., banana OR a piece of banana OR 10 peas OR a piece of fresh fruit)
Barbecue Sauce (e.g., Kikkoman)
Soap (e.g., Dawn)
Clear cup
Grinder (e.g., blender)

Procedure
1. First, prepare your DNA extracting solution.
• In a cup, mix 2 teaspoons of dish soap, 1 teaspoon of salt and 1/2 cup of water.
• Get water and mix well.
2. Place your food sample in a zip-closure sandwich bag and remove most of the air before you seal the bag.
3. Mash your food sample through the bag in your hand; add the DNA extracting solution and continue mixing.
4. Carefully pour the mixture into a clear cup.
5. Add an equal amount of rubbing alcohol to the cup. Take care not to stir or tip the cup; do not mix the two liquids.
6. Observe the line between the food mixture and the alcohol. You will notice a white thread-like strand appearing at the line. This is DNA. The DNA will clump together and float to the top of the alcohol layer.
7. You can "pull" your DNA sample out of the cup using a Q-tip.
8. Take a picture of your sample and upload it to the associated Discussion Board for this week's activity post.

"Microbes Are Everywhere" with student sample



[Live online guided dissection](#)

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