Evaluate Sessions and Win!

- Navigate to specific session to evaluate
- Select “Evaluate Session” on session details screen
  - Complete session evaluation*

*Each session evaluation completed (limited to one per person per session) = one contest entry. **Five (5) $25 gift cards** will be awarded
Online Science Lab Kits For Health Science Lab Professionals

Brendan Haynie (Liberty University) & Shannon McGurk (Carolina Distance Learning)

Wednesday, October 6th
2:15 PM to 3:00 PM
National Harbor 1
Choices, Choices
Choices, Choices?

EXTERIOR: MIDNIGHT BLACK METALLIC

INTERIOR: COCKPIT RED PERFORATED LEATHER

EXTERIOR: SUPersonic RED WITH TWO-TONE MIDNIGHT BLACK METALLIC ROOF** $925

INTERIOR: BLACK PERFORATED LEATHER
Choices 😞

- **Panoramic glass roof with front power tilt/slide moonroof**
  - $1,360 msrp
  - View All Details

- **Panoramic glass roof with front power tilt/slide moonroof with options**
  - $1,510 msrp
  - View All Details

- **Navigation Upgrade Package**
  - $1,760 msrp
  - View All Details

- **Navigation Upgrade Package with options**
  - $4,550 msrp
  - View All Details

- **Navigation Upgrade Package with options**
  - $4,700 msrp
  - View All Details

Next Step
Choices Custom!

be·spoke
/bəˈspōk/

adjective  BRITISH

made for a particular customer or user.
"a bespoke suit"
• making or selling bespoke goods, especially clothing.
"bespoke tailors"
Custom!
Custom!

• Exact fit to Learning Objectives
• No convoluted navigation
• No extraneous experiments
• Concept focused learning = STUDENT SUCCESS!
Custom!

**symbiosis**

/ˌsɪmbɪˈɔsɪs, ˈsɪmbəˈɔsɪs/

**noun**  
BIOLOGY

*interaction between two different organisms living in close physical association, typically to the advantage of both.*

- a mutually beneficial relationship between different people or groups.  
  plural noun: *symbioses*  
  "a perfect mother and daughter symbiosis"
Online Labs Should Provide:

- Students the Opportunity to Apply Technical Skills and Knowledge and Engage in the Scientific Process
- Clearly Defined Learning Objectives
- Safety
Hands-On with Laboratory Kits for Online Courses

• Students engage in scientific processes as they perform experiments, analyze results, and report their findings.

• Since students conduct experiments independently, there is increased engagement versus in-person lab groupwork.

• Students learn to troubleshoot and work thoroughly on the lab activities.

• Students favorably describe their experiences, with hands-on labs providing them with opportunities to observe and apply concepts and extend their overall understanding.
How To Assess Students?
– Brain Pinning and Labeling Lab Exam
Acid-base, fluid, and electrolyte balances must be maintained in order to maintain the dynamically stable internal state of the body known as homeostasis. The acidity level (often expressed as pH) of all organisms is highly regulated. A slight increase or decrease in acidity can have a detrimental effect on the well-being of an individual.
ACTIVITY: Measuring the pH of Common Household Items

1. Select a liquid to test.
2. Make a hypothesis: Is your item more acidic or basic? Why do you think so?
3. Fill a foam cup about one-quarter full with the common household liquid of your choice.
4. Dip a pH indicator strip into the liquid.
5. Remove the strip; while it is still wet, compare the color of the test strip with the reference color chart and take a photo to document your observation.
6. Set the solution aside for the workshop presenters to collect at the end of the workshop.
Same Learning Outcome without Hands-on Experience
Research shows that students who only view experiments (rather than engaging in them) perform worse on conceptual knowledge exams than those who participate in physical or virtual labs (Zacharia and Olympiou, 2011).

While virtual labs offer students the ability to manipulate environments and develop problem solving skills, students miss out on some of the hands-on skills that labs completed with authentic materials can foster. As De Jong et al. (2013) note, “Physical laboratories have advantages when the instructional goal is to have students acquire a sophisticated epistemology of science, including the ability to make sense of imperfect measurements, and to acquire practical skills” (306).
Helping Students Succeed

What Students Have to Say…

“I like the labs where we get to choose what we test, like choosing a type of food to experiment on. That’s really fun!”
Alderson-Broaddus University Student

“The lab kits are great! They come with everything you need to do a dissection. I was afraid to have to do a dissection at home, but the great lab kit and instructions make it easy.”
Chattanooga State Community College Student

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