

Hands-On Classes (eg, Labs) & Research

Moving hands-on learning to an online environment will be particularly challenging. Below are some resources to help you start creating a plan and acting towards moving to an online setting for hands-on learning.

Ideas | Guides:

- [Hands-On Learning ideas from TIDES](#)
- [Resources compiled by Research Educators in the Freshmen Research Initiative](#) (living document)

Online Simulations | Virtual Labs | Alternative Tools for Online Labs:

- [PhET from University of Colorado](#) – Multi-disciplinary; Free
- [Hayden-McNeil Lab Simulations](#) – Multi-disciplinary; \$\$\$
- [OnlineChemLabs](#) – Chemistry; \$\$\$
- [Labster](#) – Multi-disciplines; \$\$\$ ([reduced prices and/or free during COVID-19](#))
- [iNaturalist](#) – Biology; Free; Alternative tool
- [Data Nuggets](#) – Multi-disciplinary; Free; Focus on data collection/interpretation
- [BioInteractive](#) – Biology focus; Interactive exploration of topics
- [Jason Learning](#) – Multi-disciplines; \$\$\$; Authentic “real-world” focused
- [zyBooks](#) – Computer Science, Engineering and Math; Free
- [SABER](#) – Biology; Free
- [Digital Options for Teaching Labs](#) – Compiled by Tiny Earth; Many additional links within
- [Interactive Video Vignettes](#) – MINT Project; Free live-action videos
- [Avida-Ed](#) – Evolutionary biology simulations; Free; Michigan State University
- [Online Resources for Science Laboratories](#) – Google doc with links to multi-disciplinary simulations/virtual labs
- Massive Open Online Courses (MOOCs) from [edX](#) and [Coursera](#) offer multi-week/chapter online courses on all sorts of topics. Many of these can be audited for free. There may be “weeks” or “chapters” of some classes that would be an appropriate substitute for some of your course.

Funds to support teaching continuity:

If there are materials that would facilitate your teaching in an online environment, but they are not free, please contact your departmental contact who may be able to help you secure those materials, including virtual labs.

- [Departmental Contacts for Teaching Continuity](#)

What are our CNS lab instructors doing?

TIDES hosted a discussion with CNS undergraduate lab coordinators and instructors to hear more about what they were doing. This is a [summary](#) of the many goals they have, and ideas for accomplishing those goals.

What are other campuses doing?

See what other Universities are doing by checking out their websites, compiled in this [Google doc](#).

Please contact Brandon Campitelli (brandon.campitelli@utexas.edu) in TIDES with suggestions to add.

Articles of interest:

- [Expanding the Virtual Classroom: Making Science Labs Available to Online Students](#)
- [Online Science Labs: The Best Way to Learn Science is to Do Science](#)
- [Incorporating Lab Activities in Online Geology Courses](#)
- [How to Quickly \(and Safely\) Move a Lab Course Online](#)