

Online Undergraduate Cell Biology Laboratory Resource Curation

Prepared by the Cell Biology Laboratory Working Group

Funding: Associated Colleges of the South – Advancing Pandemic Pedagogies Initiative

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As we enter a new phase in higher education, many of us have been searching for ways to engage students in a virtual learning environment and have found this to be a crucial task for instructors of laboratory courses. The transition from face-to-face instruction has forced us to rethink our approach to teaching labs in the science disciplines. No longer can we solely use the laboratory environment as a training ground for emerging scientists. Rather, we must pivot to online tools and resources through which students can be introduced to and become familiar with the standard approaches used in molecular and cell biology research. Regardless of the physical constraints during this period, we must continue to guide students through the discovery process.

In response to the COVID-19 pandemic, the Associated Colleges of the South brought together colleagues from across the consortium to identify solutions and share resources that address the challenges of moving laboratory instruction into an online or hybrid format. The Cell Biology Lab Working Group curated existing resources into an online toolkit.

For the purposes of this document, and to be consistent with the extensive crosstalk between biological sub-disciplines, we have framed “cell biology” broadly, including activities that focus on genetics, bioinformatics, and biochemistry. Each item we have curated has been aligned with core concepts and competencies from *Vision and Change*, which should aid in identifying resources that will help students achieve the learning outcomes for your course(s). Notably, we have focused on curating resources that facilitate active-learning, inquiry, data analysis, and/or authentic research.

To further aid in identification of resources that fit your needs, we have crafted the *At-A-Glance* spreadsheet, which indicates the duration and course-level for each item. More detailed curation

for each resource summarizes the activities, indicates whether and where related materials can be found, and highlights associated publications. Because we appreciate the challenges of pivoting to online or hybrid instruction, we have focused largely (though not exclusively) on identifying modules that are ready-to-deploy. To avoid duplicating existing efforts, we have also included links to repositories of virtual lab activities generated by other groups.

We hope you will find this helpful as you prepare for the upcoming term.