

The CRISPR in the classroom network: A support system for instructors to bring gene editing technology to the undergraduate classroom

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CRISPR-Cas9 technology represents a once-in-a-generation advance in molecular biology that allows precise gene editing and has become a mainstream technique in research. However, as is often the case with new technology, most undergraduate laboratory instructors do not have the training or support to integrate CRISPR-Cas9 into their courses. To remedy this, we have formed the “CRISPR in the Classroom” Network and are facilitating a series of workshops and mentoring activities designed to provide instructors, postdocs, and graduate students the skills, support, and confidence needed to introduce and implement CRISPR-Cas9 technology in undergraduate laboratory classrooms (NSF RCN-UBE #2120417). Our summer workshops provide participants with flexible, easily-adapted curriculum and start-up kits to overcome the hurdles associated with implementing a new technology. Assessment data from a previous online workshop and two NSF-sponsored in-person workshops (Awards #1823595 and 1916486) show most workshop participants develop the skills and confidence necessary to implement CRISPR-Cas9 modules into their laboratory courses within one year of the workshop. The CRISPR in the Classroom Network represents a dynamic community of practice dedicated to providing undergraduate life science instructors with the tools and support needed to integrate CRISPR-Cas9 technology in their courses and across model systems.

Keywords: CRISPR, mentoring, curriculum

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