

Abstract Submitted
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Teaching Technical Competencies for Fluid Mechanics Research

RANDALL TAGG, University of Colorado Denver — We are developing an “on demand” framework for students to learn techniques used in fluid mechanics research. The site for this work is a university-grade laboratory situated next to Gateway High School in Aurora, Colorado. Undergraduate university students work with K-12 students on research and technical innovation projects. Both groups need customized training as their projects proceed. A modular approach allows particular competencies such as pump selection, construction of flow piping and channels, flow visualization, and specific flow measurement methods to be acquired through focused lessons. These lessons can be learned in either a stand-alone fashion or assembled into units for formal courses. A research example was a student project on diffusion of infectious material in micro-gravity in the event of an intestinal puncture wound. A curriculum example is a 9-week quarter of high-school instruction on instrumentation that uses small-scale water treatment systems as a case study.

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