

TCD Chemistry Seminar

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Development and evaluation of large data sets for Chemistry Education Research (CER)

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Once a niche area, Chemistry Education Research (CER) has established itself in recent years as a prominent multi-disciplinary area of informative research that is relevant to all chemists. Chemistry is unique in terms of learning with three prominent concepts for learners to frequently contend with: the macroscopic (experiments), sub-microscopic (molecular, atomic and sub-atomic) and symbolic (equations, representations and diagrams). However, despite a potentially huge selection of areas to specialize in, it mainly attempts to ask how, why, where and when we learn chemistry.

This talk will begin with an overview of CER in a historic sense as well as recent success internationally and in Ireland. It will then lead into a discussion about the challenges and successes to date of establishing effective processes for carrying out high quality chemistry education research (CER). It will also chart the development and evaluation of informal education workshops that aim to bridge the gap for students at a formative juncture in their development.

Finally, the recent transition of our feedback methods to a reliable digital format to allow for large scale data gathering and processing is also presented here, along with the data collected so far and the analysis completed to date. With an impressive 81% (consented and full completion) response rate from 1196 students to date, the Current Chemistry Investigators (CCI) collaboration project has set new standards for evaluation in such a short space of time.