# Innovative Clinical Field Experiences for Teachers of Science

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The university-affiliated morning radio hosts recently interviewed the proprietors of a local distillery. Among the questions the hosts asked their guests was how they choose what category within a given type of spirit to distill. Their answer was something that resonated with us, and something we often hear from Innovations reviewers. They choose to distill the spirits that they enjoy consuming the most. Similarly, we certainly enjoy receiving all of the manuscripts that are submitted to Innovations, but especially those that are most pertinent to our particular setting. We do our best to match manuscripts to reviewers with expertise in the subject and, for that reason, the vast majority of the feedback that we receive from reviewers is that they also enjoy the manuscripts they review.

So, one of the things we have been thinking a lot about lately, is something we would also really enjoy hearing more about from other science educators. Admittedly, our university does not use the most innovative approaches to one of the most critical aspects of secondary preservice teacher education – clinical experiences. Regardless of the terms used over the years to describe the full-time experiences preservice teachers receive by working with a mentor teacher every school day for several weeks in a semester, this experience can have profound and lasting effects on preservice teachers, both positive and negative. We have been a UTeach replication site for quite a few years now and our students receive more time in the classroom than they ever have before. However, we continue to hear feedback from students that regardless of the amount of time they spend in schools prior to student teaching, nothing prepares them for the rigors of full-time student teaching. We wonder how other institutions prepare interns for full-time student teaching and whether interns spend more than one semester working daily with mentor teachers.

Our institution is one of the few universities nationwide to have a significant number of education faculty housed in its science content departments. While our university has a Center for Professional Practice (CPP) that oversees the placement and coordination of the over 400 K-12 student teachers across all disciplines each academic year, science education faculty serve as supervisors of secondary science education majors. At our institution the CPP places each student with a middle school and a high school mentor teachers and the university supervisor or the student's academic advisor is not really involved in the process. Other institutions employ a more purposeful pairing of intern to mentor teacher based on feedback and insight from numerous people who interact with the intern. It has recently become more apparent the extent to which our approaches to supporting student teachers varies across our university from department to department and across colleges within the university. Despite those variances, the approaches are fairly traditional in the sense that we are certain the majority of universities use similar approaches.

On the other hand, our preservice early childhood and elementary education internship and methodology courses consist of a broad array of innovations, which include switching focus to the NGSS science and engineering practices (and modifying them, if necessary, for early childhood), creating new field placement lessons, weekly teaching of science and/or engineering lessons, coaching from the classroom mentor teacher, lesson planning under the supervision of the course instructor, and methods/content discussions and activities. We also know that some of our colleagues have implemented more innovative approaches to clinical experiences, such as remote observations using the latest audio and visual technology, pairing two interns with one mentor teacher, requiring interns to teach less so they can devote more time to planning, and likely a host of approaches we have yet to hear about. Some of our colleagues observe entire lessons from start to finish whether the class is 45 minutes or 90 minutes long. Others observe more frequently for shorter periods of time, often with a specific aspect of the lesson as the focus of the observation.

If you read many of these editorials, by now you know where we are going with this. We feel science educators will be responsive to hearing about innovative approaches and we urge those of you implementing such approaches to share them with our colleagues through Innovations in Science Teacher Education. It's not that we don't want to implement innovative approaches at our institution, so much as it is that we know there are a lot of

barriers to change, both internally and externally. Thus, those who have worked with colleagues across your campus, local school systems, state departments of education, and/or higher education commissions are in a position to inform others hoping to adopt approaches that may better support either more interns or support interns to a greater extent than more traditional approaches may permit. Perhaps we are alone in our desire to learn more about innovative practices for clinical experience in science education, but if we are not, and your manuscript is shared with colleagues, you just might find someone so thankful they buy you a glass of your favorite spirit or beverage at the next ASTE conference!