

## Why Attend the ADI Train the Trainer Institute?

Classroom instruction based on the most recent research on how people learn looks different than traditional instruction. Based on current research, high quality science instruction should involve students learning facts and terms as needed to develop explanations or design solutions rather than memorizing them at the beginning of a unit, using core ideas as tools for understanding or explaining, working in collaborative groups to figure things out rather than relying on the teacher, and answering “why” or “how” questions rather than “what is” or “does it” questions without justifying how they know what they know. Furthermore, high quality science instruction should involve students *doing* science in ways that are authentic to how professional scientists do science. Literacy and mathematics are critically important to both professional and school science. High quality science instruction should involve students reading and making use of multiple sources to support or refute claims rather than reading single texts from a textbook, writing reports, creating posters, and making presentations instead of answering questions out of a textbook, and using mathematical and computational thinking in order to answer complex questions, rather than using prescribed algorithms.

Unfortunately, many of the resources available to teachers are not aligned with how we know students learn best, and many do not effectively integrate literacy or mathematics. This is especially true of science lab curricula, which are often so structured that they leave little room for students to make mistakes so that they might learn from them. Argument Driven Inquiry, or ADI, is a laboratory instructional model that was designed to make school science look more like professional science and to give students the opportunity to do science the way scientists do. When students complete a lab using the ADI instructional model, they will design and carry out their own investigations, create their own arguments which they will support with evidence, engage in critique with their peers, write authentic reports about their work, and peer review the work of their peers.

**Reading, writing, language, and mathematics skills are integrally important to professional science and should be part of high quality science instruction.** ADI is designed to be cross curricular because research shows that integrated instructional units are more effective than traditional laboratory instruction and even cultivate greater interest in science. During each lab, students use literacy skills to obtain, evaluate, and communicate scientific information through reading, speaking, listening, and writing. Not only does **ADI provide students an opportunity to learn to write, it also uses writing (and reading, speaking, and listening) as a means to help students learn. Literacy instruction does not come at the expense of teaching science content but is instead integral to content instruction. Similarly, students will need to creatively use mathematics to solve problems.**

Science teachers like using ADI because students truly engage with the material. One teacher said “Using ADI is exciting for students because they are actively involved in the learning process. ADI encourages students to apply core knowledge through a method of inquiry that allows the students to fully participate in applying that knowledge to a problem. Not only do students design their project but they learn to support and defend their position.” Teachers also appreciate the authenticity ADI brings to school science. “This is the way to actually teach science. Teaching like this, feels like I’m coming home.” as well as the freedom ADI gives them, as it can be integrated into any curriculum. “I love the framework and its easy ability to be integrated into what I’m already doing.”



Research on ADI shows that it helps students learn. In fact, students whose schools integrated ADI into instruction showed more growth than students whose schools did not use ADI.

ADI can also be used to improve scores on state tests and national tests of college and career readiness, like ACT Aspire.

Students are most successful with ADI when their teachers are well trained in ADI instruction. When introducing any new teaching model, high quality professional development is important. Research shows that the most effective professional development provides teachers with sustained, ongoing support as they work to change and improve their practices. One way to make sure high quality professional development facilitators are readily available is to provide members of a district with the tools they need to train and support their colleagues.

At Argument Driven Inquiry Train the Trainer events, participants learn to facilitate ADI professional development and provide ongoing support for colleagues. Train the Trainer gives participants all the skills, resources, and materials needed to facilitate ADI training at a truly professional level. Participants leave feeling prepared to enact change within their schools and districts.

As one participant that attended in 2017 from Prince George’s County Public Schools in Baltimore, Maryland said, **“I would absolutely recommend ADI Train the Trainer! The information was presented clearly and effectively, and participants got a chance to try out teaching the material. I also left with a plan for implementing ADI in my department.”**

