What the Judges Are Saying…

The UL Innovative Education Award supports excellence and innovation in youth programming that uses the Environment as a pathway to STEM learning. Each year, judges review the applications and critically examine the state of innovation demonstrated by the submissions. The following themes rose to the top in judges' deliberations in March 2016 and provide insight into the innovative work that ULIEA values.

Advocacy – Judges felt that the applications that incorporated advocacy programs pushed youth beyond identifying problems and data collection. Advocacy progams helped participants synthesize their learning in practical ways. They were impressed by the number of proposals that encouraged youth to present the source of the problem and implications of the problem to multiple audiences. Many of the proposals that did this well also enabled youth to advocate for a solution. They described this innovation as encouraging critical thinking and communication skills among youth of all ages. Judges felt that advocacy or civic engagement as part of the learning program could more effectively enable learning that results in youth taking ownership over problems as citizens.

Long-term Scaffolding – Judges noticed had also invested in sustained contact with the learners over the course of several months or years. These "deep learning" programs were described as offering more effective, meaningful, and measurable engagement in STEM and STEAM learning because change could be tracked over time. Judges felt that these applications demonstrated that long-term scaffolding strengthened learning outcomes for individuals most effectively. They suggested that there was a trend building in more multi-contact, long-term experiences that may be reflective of a change in the field.

Service Learning – Judges observed that highly ranked applications were more likely to draw on service learning theory, where youth participate in projects that offer tangible benefits to their communities and where learning is directly associated with creating that benefit. Judges felt that this trend, while not necessarily radically new, represented experimentation with experiential learning. This approach to learning helped youth develop a more complex understanding of environmental issues in a political economy and how STEM can meet the needs of the community. A few judges noted that the maturity of these experiments with service learning build on decades of experimentation. New service learning adaptations focused on more durable lifelong advocacy skills that they hadn't seen in past.

Including Many Voices – Judges noticed a more inclusive approach was common across many of the more highly ranked applications. These applications shared a bottom-up approach that incorporated many voices that are historically not heard in E-STEM problem-solving. They noted that these voices represented urban, religious, Indigenous, people of color, elderly, and women-led populations. These applications demonstrated that many voices shared a common deep concern about their communities. Judges described this as innovative because they observed E-STEM leaders' emerging skills and capacities with navigating learning in a multicultural society. They ranked more highly the applications that demonstrated how programs valued a variety of perspectives in their programming. They also noted that these programs tended to yield more novel and innovative solutions than the programs that focused on either one well-represented

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group or one cultural voice. The applications that demonstrated working with multiple perspectives were also more likely to have higher participation rates.

Youth-Led Action – Judges appreciated that the applications had a noticeably higher number of programs that flipped traditional hierarchical models. Some programs encouraged teens to assume leadership roles in community programming based on their knowledge and interests in that community. Judges were impressed by the program designs that engaged youth as experts who could scaffold adults' understanding of environmental issues through STEM knowledge. Judges noted that a few exemplary proposals highlighted students' ability to use their individual skills and interests in STEM learning so they could engage directly in addressing the challenges of global change. Judges noted that the concept of youth-led action has been discussed for several decades, but noted that historically the theory has not been implemented well in practice. They noted that the more successful programs in this set of applications demonstrated that this theory is now being implemented more successfully.

Opportunities for Collaboration & Non-Profit Leadership – Judges felt that non-profits are well positioned to take a leadership role in developing innovative E-STEM programs. They felt that other sectors are less unable to make gains in this area. For example, they noted that traditional schools cannot undertake creative projects because they are constrained by testing and curriculum requirements. They also observed that local and regional governments and businesses seldom provide leadership on E-STEM issues. Despite these constraints, they felt that strong E-STEM programs often relied on strategic collaboration with schools, universities, businesses, and other non-profits. Non-profits seemed to be stepping into the gap left by other sectors to generate durable innovation. The more successful programs in this competition seemed to leverage Next Generation Science Standards' emphasis on project-based learning, but noted that this may also be an artifact of the application process that sought evidence that may be easier to collect through school partnerships than through youth programs that operate completely outside the school context. As a result, this trend may not be generalizable to all social good programs. They felt that of the applications they reviewed, those that rose to the top as leading innovations seemed to be most successful when they worked with schools where teachers are siloed by discipline. These innovative E-STEM programs seemed to be an important intervention in a rigid school system that helped educators think in a more cross-curricular or transdisciplinary ways.