

NATIONAL TECHNOLOGY LEADERSHIP SUMMIT

National Press Club, Washington, D.C.

Educational Manufacturing Strand

Thursday, September 22

- *Overview of Summit Goals and Objectives – 9:00 a.m.*
- *Session 1 – 9:30 to 11:15 a.m. (Bloomberg Room)*
 - a. Review of *Open-source Educational CAD Model Repository* and exploration of STEM kits
 - b. Discussion of development of a user-friendly interface for the CAD model database
- *Lunch – Noon to 1:15 p.m.*
- *Session 2 – 1:30 to 3:20 p.m. (Bloomberg Room)*
 - a. Discussion of strategies for establishing a community and ecosystem around educational manufacturing and the open-source Educational CAD Model Repository
 - b. Discussion of methods for assessing outcomes
- *Strand Updates – 3:35 to 3:45 p.m. (First Amendment Room)*

Friday, September 23

- *Session 3 – 10:30 to 11:45 a.m. (Bloomberg Room)*

Discussion of possible organizational structures and governance for an Educational Manufacturing Consortium
- *Strand Summaries – Noon*

Overview

The goal of the 2022 NTLS Educational Manufacturing Strand is to engage in planning that will ultimately lead to establishment of *Educational Manufacturing Consortium*. In this context, educational manufacturing entails mass manufacturing of educational materials by a non-profit organization. Educational manufacturing offers the potential of connecting organizations such as Fab Labs that have manufacturing capacity with schools that can benefit from use of open-source educational materials. The goal of the planned consortium is to encourage and support manufacturing of educational products by non-profit institutions.

Activities in Support of Establishing an Open-Source Ecosystem

- Establishment of a distributed educational manufacturing network in which Fab Labs and makerspaces with manufacturing capacity are matched with K-12 schools
- Development of assessment instruments to measure the impact and outcomes
- An open-source *Educational CAD Model Repository* that will serve as a clearinghouse for peer-reviewed open-source educational CAD models
- A peer-reviewed open-source practitioner journal, *Educational Fabrication & Design (ED&F)*

Potential Impact

The widespread availability of design and fabrication tools in makerspaces offers the potential to create new objects and remix existing designs. Science, mathematics, and engineering educators and their students will benefit from access to carefully curated models and associated instructional materials. The impact of the described EMC activities has the potential to increase effective use of makerspaces across all of the relevant disciplines and lead to broader literacy in design and fabrication.