

American Innovations in Digital Fabrication Project Newsletter



Institute for the Integration of Technology into Teaching and Learning

“American Innovations in Digital Fabrication” project funded by the National Science Foundation

On July 1, 2015, the National Science Foundation (NSF) announced it was awarding \$1,158,455 in funding to the University of Virginia’s “American Innovations in Digital Fabrication” project.

As part of this new three-year project, the University of Virginia will work in collaboration with Institute for the Integration of Technology into Teaching and Learning (IITTL), as well as James Madison University, Princeton University, and the Smithsonian Institution. The project will work to transform historical inven-

tions housed at the Smithsonian into reconstruction invention kits that can be printed in schools across the U.S. using 3-D printers.

These digital invention kits will include digitized versions of items such as the telephone, the telegraph, and several early electric motors. The goal of the project is to create a new K-12 science, technology, engineering and mathematics (STEM) model using 3-D technology as a key emergent technology in the field of engineering. One of the schools pilot testing the historical invention recon-

struction kits will be Sanger Middle School, located in Sanger, Texas. Students in select classrooms will be able to print reconstructions of historical inventions directly from the kits. The hope is that students will develop an interest in the STEM fields, specifically engineering, as a result of this project.

IITTL is incredibly excited to be able to work on such an important project with so many great institutions and organizations. For additional information, visit www.iittl.unt.edu.

Interest points:

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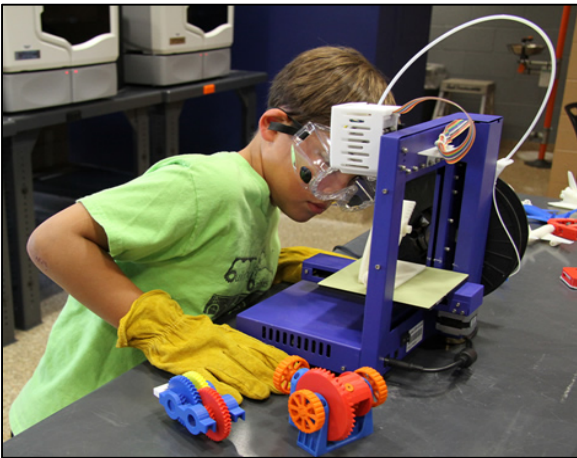


Photo Illustration: Nigel Standish, University of Virginia

Students in the Laboratory School for Advanced Manufacturing at the University of Virginia used modern fabrication technologies to reconstruct key inventions in the Smithsonian’s archives. A similar program will be followed by students from Sanger Middle School as part of the new “American Innovations in Digital Fabrication” project.

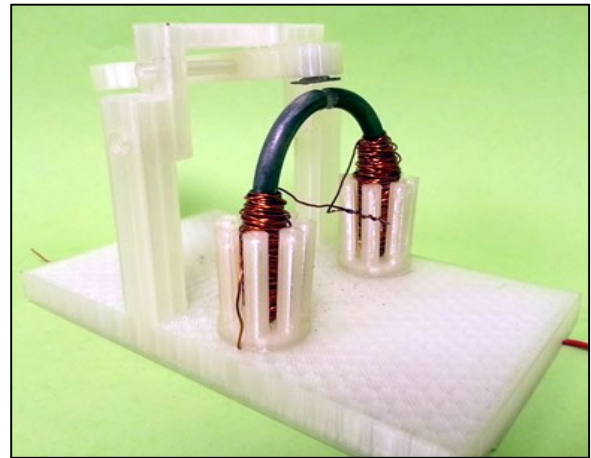


Photo Illustration: Nigel Standish, University of Virginia

This reconstruction of the original Vail telegraph and relay is an example of the kind of inventions that will be reproduced using historical reconstruction kits. As part of the “American Innovations in Digital Fabrication” project, students from Sanger Middle School will reconstruct many historically-significant inventions from the 19th and early 20th centuries.

Open house for “American Innovations in Digital Fabrication” project

On August 26, 2015, IITTL hosted an open house in the Agora (G-165) at Discovery Park as an introduction to the new “American Innovations in Digital Fabrication” project. Various UNT faculty and staff from a wide range of departments were in attendance, as were faculty from Texas Women’s University and numerous teachers and officials from Sanger ISD.

Attendees were served food and refreshments, after which they were introduced to key project personnel. Following the introductions, Drs. Tandra Tyler-Wood, Gerald Knezek, and Nandika D’Souza gave presentations about various aspects of the new project.

At the conclusion of the presentations, the attendees took a tour of some of the facilities at Discovery Park.

They visited the Advanced Research Laboratory (G-152) to examine small-scale 3-D printers similar to the ones that will be used for the new project. Following that, attendees were taken to the Design Research Laboratory (C-136a) to see 2-D printers, and then to the College of Engineering’s Tech Shop (F-160) to examine two brand-new and highly advanced 3-D print-

ers recently acquired by UNT.

IITTL would like to thank everyone that attended the open house for this exciting new project. For information on other projects, both past and present, please visit the IITTL website at www.iittl.unt.edu.



Photo Illustration: IITTL

Dr. Tandra Tyler-Wood, lead principle investigator for UNT’s portion of the “American Innovations in Digital Fabrication” project, gives a presentation on the project to attendees of the open house held on August 26, 2015.



Photo Illustration: IITTL

The two new 3-D printers shown to open house attendees on their tour of Discovery Park, a Stratasys *Objet 30 Prime* (front) and a Stratasys *Fortus 450mc* (back), currently housed in the College of Engineering’s Tech Shop.

IITTL hires new research assistant

IITTL is happy to announce that it has hired Spencer Austin as a new research assistant. Spencer began working in that position on September 1, 2015, where he will primarily focus on activities relating to the new “American Innovation in Digital Fabrication” project.

Spencer received his Bachelor of Arts in History from UNT last May and is currently applying for grad-

uate programs. Welcome to the IITTL team, Spencer!



Photo Illustration: IITTL

Upcoming events:

- Faculty from UNT’s College of Visual Arts and Design will be guided by IITTL staff on a tour of the digital fabrication facilities at Discovery Park on September 22, 2015 from 12:30 to 1:30 p.m.
- Dr. Tandra Tyler-Wood will travel to Kona, Hawaii to attend the E-Learn Conference and present a paper on digital fabrication from October 19 to 22, 2015
- Spencer Austin will man IITTL’s booth at the Denton Mini Maker Faire being held on October 17, 2015 at the Denton Civic Center from 10 a.m. to 5 p.m.

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About IITTL:

The Institute for the Integration of Technology into Teaching and Learning (IITTL), housed in the Department of Learning Technologies at the University of North Texas (UNT), is chartered by the UNT Council of Deans to conduct research and implement best practices in the areas of teaching and learning technologies. IITTL's instruments and online data collection systems have allowed it to gather data from thousands of educators in recent years. It has generated four books and more than a dozen referred journal articles related to the impact of information technology in education.

Directors of IITTL:

- **Dr. Gerald Knezek:** Director of IITTL and Regent's Professor of Learning Technologies at UNT
- **Dr. Rhonda Christensen:** Associate Director of IITTL and Research Scientist
- **Dr. Tandra Tyler-Wood:** Associate Director of IITTL and Professor of Learning Technologies at UNT

Staff of IITTL:

- **Anastasia Spatz:** Program Project Coordinator II
- **Yvette Whitworth:** Program Project Coordinator I
- **Dr. Dana Owens:** Project Support
- **Spencer Austin:** Research Assistant



Dr. Tandra Tyler-Wood (far left) with Anastasia Spatz (center left), Dr. Dana Owens (center right), and Dr. Rhonda Christensen (far right).