

Engaging Louisiana Schools: Making the 3D manufacturing revolution real for all of the next generation

Dr. Chester Wilson, Louisiana Tech University

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What is the outcome or accomplishment? (1-2 short sentences describing it and why it is transformative; 50 word max. suggested)*

Louisiana Tech University researchers are building Louisiana's future advanced manufacturing workforce by challenging 6th – 12th grade students in low income school districts to embrace 3D manufacturing, robotics and computer programing. The outreach program has been wildly successful and has expanded to include a new pilot outreach effort in prisons teaching inmates and their families STEM concepts.

What is the impact? (1-2 simple sentences describing the benefits for science, industry, society, the economy, national security, *etc.*; suggested 50 word maximum)

3D printing is providing a path to leverage our ability to combine ideas with the information age, and build the next wave of American manufacturing. Encouraging children to participate in STEM activities and to attend college is vital to developing our future advanced manufacturing workforce and researchers.

What explanation/background does the lay reader need to understand the significance of this outcome? (1-2 paragraphs that might include, for example, more on who, when, where; NSF's role; support from multiple directorates/offices; what makes this accomplishment unique; additional intellectual merits; or broader impacts such as education, outreach, or infrastructure improvement that are integral to this outcome; suggested 150 word maximum)

A team of researchers led by Dr. Chester Wilson at Louisiana Tech University has hit the road to engage middle, junior high, and high schoolers with a grand challenge: Embrace 3D manufacturing, robotics and computer programing, and participate in all America has to offer. This training is helping students realize that they can be the STEM graduate students of the future.

In only a few years, everyone in America will have access to a laptop, a 3D printer, and a drone. That means that every young person has the toolkit to invent, prototype, apply for a patent, write a business plan, and kickstart their company. This puts everyone on a level playing field, limited only by their ability and hard work.

Photos:



Students in Dr. Chester Wilson's robotics workshop at McKinney-Byrd Academy show off their 3D printed parts they are using to build a robot. This school in inner city Shreveport, Louisiana is in desperate need of STEM education due to funding problems.
Credit: Chester Wilson, Louisiana Tech University, chester@latech.edu



Students participating in the Regional Autonomous Robotics Circuit competition, in part due to outreach and mentoring. *Credit: Dr. Chester Wilson, Louisiana Tech University, chester@latech.edu*