

## Regional

# Technology can be seen as driver of history

How did the world we live in today come to be? While some scholars try to answer this huge question through physics, geography and even theology, a growing number are looking to technology for the answers. While today's society seems to be dominated by technology, much of its impact has a long history. And it's the history of technology that has gained the interest of historians like Jeff Manuel.

Born in Fargo, N.D., Manuel grew up in the Twin Cities area in Minnesota. He obtained his bachelor's degree in history and economics from Northwestern University and his master's and doctorate degrees in history from the University of Minnesota. Today he is an assistant professor in the department of historical studies at Southern Illinois University Edwardsville. His research demonstrates just how far the work of historians is from the stereotype that history is all just memorizing names and dates.

"It's a stereotype that a lot of people have, and we teachers and professors haven't done ourselves any favors by teaching that way," Manuel said. "Here at SIUE, for example, we're in the process of a top-to-bottom curriculum revision so that our curriculum isn't about memorizing dates, names, or even concepts. It's about learning the skills of thinking like a historian, going to the original source materials and trying to understand how individuals in different places and times of the past made the decisions they made and the world as they saw it." For scholars like Manuel, the recent impact made by social media and the Internet is a fertile ground for historical studies. Despite globalization, he said, there are many differences in how technologies have developed in different countries.

"There's one school of thought that says there are distinct national technical cultures," Manuel explained. "American technology looks one way, British technology looks another way and Japanese technology looks a third way. There's another school of thought that says when it comes to the development of technology, national boundaries aren't as important as they are in other fields, such as politics. In my

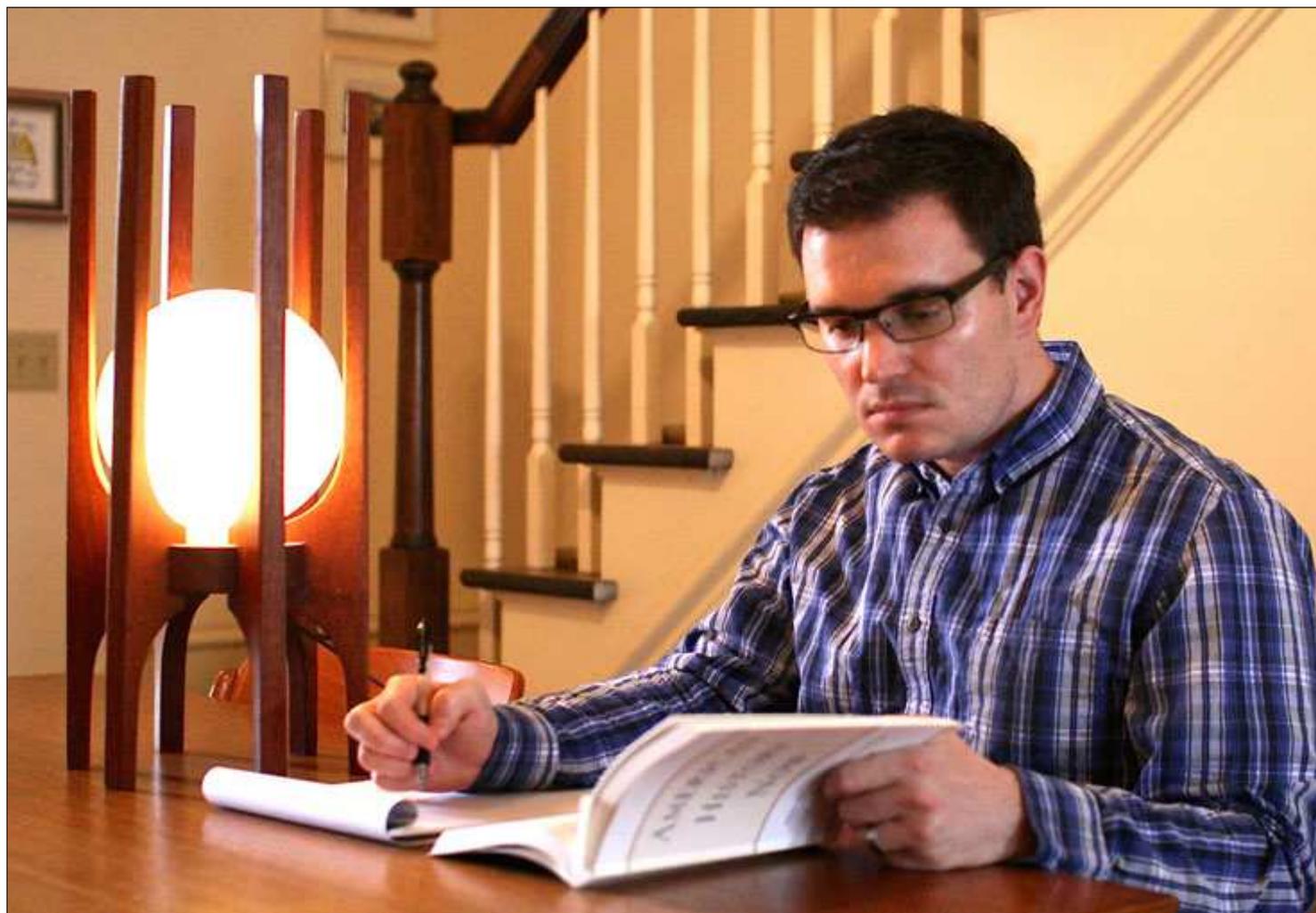


Photo by Susanne LeBlanc

## Dr. Jeff Manuel at work.

opinion, the answer lies somewhere in the middle of those two. There are certain distinctions in national technical cultures, but they're not totally different from one another." With all of this research into our history, one wonders if the lessons of history have helped us prepare for current and future technological advances.

"One of the things I have really learned is that the advances we think of as being revolutionary often are more complex than we think, or have started a lot earlier,"

Manuel said. "A lot of students in my Facebook class have the stereotype that this was something completely new, with no precedent in the world. Well, the history of technology shows us that there are important precedents. The early telegraph technology in the 19th century mimicked a lot of what we see in the Internet and social networking today."

He said that that technology is always intertwined not only with economics, but also with politics and that that is some-

thing he has illustrated through a recent article he wrote about low grade iron-ore processing. In that article Manuel reviewed an enormous change in the technology and industry of iron-ore (the essential raw materials for steel making, one of the essential raw materials for the global economy in the 20th century.)

"Edward W. Davis was an engineer who worked to perfect a low-grade pelletized iron-ore, called taconite-ore," Manuel said. "The process he developed allowed going

## Aldemaro Romero Jr. College Talk

from milling low-grade ore, which only contained about 20 percent iron by volume as rock in the ground, to milling processes that made marble-sized pellets which contained about 60 percent to 70 percent iron. This became the essential technology for how iron ore is used in blast furnaces around the world."

One of the things Manuel uncovered was the tremendous amount of politicking Davis was involved in to have his new method adopted. The stereotype we sometimes have is that innovators come up with a better idea, which everyone quickly accepts.

"Nothing could be further from the truth," Manuel said. "The history of technology is rife with competing ideas where one becomes more widespread because the people behind them are very good at politicking, manipulating the market or through marketing. Davis changed tax rules for iron ore, convinced people that other forms of iron ore were running out and that this technology was essential for saving the industry and economy in that region. He was a really effective politician, and because of that his technology was adopted. It's the down and dirty politics and economics that really determines which technologies get adopted."

Manuel continues his research on the history of technology and is currently finishing a book-length project that examines the Lake Superior iron-ore mining region. "Technological innovation is one part of the story," he said. "But it also talks about the efforts to keep the iron ore mining industry alive in the second half of the 20th century as it faced global competition and de-industrialization."

*Aldemaro Romero Jr. is the Dean of the College of Arts and Sciences at Southern Illinois University Edwardsville. His show, "Segue," can be heard every Sunday morning at 9 a.m. on WSIE, 88.7 FM. He can be reached at [College\\_Arts\\_Sciences@siue.edu](mailto:College_Arts_Sciences@siue.edu).*