

Railroad study tracking unorganized data

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A University of Nebraska-Lincoln study on railroads parallels its subject in uncanny ways. Like early railways, research will chart new tracks through a frontier of untapped data.

UNL's "Railroads and the Making of Modern America," led by history professor William Thomas, was one of eight research projects worldwide to receive funding from the Digging into Data Challenge grant, awarded Dec. 3 in Canada. The nearly \$100,000 grant will allow the project to tap into and organize vast pools of digitized data, such as old newspaper scans.

Each team applying for the grant was required to be both interdisciplinary and international, with partners in the United States, Canada and the United Kingdom. Thomas' project has ties in history, the humanities and computer science.

UNL is also partnered with the University of Victoria and McGill University in Canada, and Thomas is working closely with geography professor Richard Healey's UK team at the University of Portsmouth, which received funding of 98,900 pounds (approximately \$164,500).

"Railroad-related information is, at least for the 19th century and early 20th century, there's just so much of it," Thomas said. "It's kind of like the Internet today. Not just a project about the history of railroads but about cultural change that comes with mass technology change."

"We're living in the Internet age, and it's changing the way we communicate, the way politics are run and the way people see themselves. Railroads had similar effect in the 19th century. It changed all sorts of things. They kept enormous records – open any 19th century newspaper, and railroads are all over the place – stocks, stories and schedules."

According to Thomas, the

grant will help researchers sort through that huge amount of data. The research is focused not only on the history of railroads but also on the lives of workers and their environmental impact. This means a large number of digitized sources, such as old newspaper articles, are relevant. Until now, there have been no organizational or search tools to help researchers sift through them.

"As we've digitized all this page, our challenge is to dive into those and look at workers and look at environmental impact, and give researchers tools to find patterns. It's a huge problem with that much data," Thomas said.

"And this project – this grant – enables us to develop tools for visualizing this data. And you know, it's also a big challenge. So I think we'll really move toward some programming, especially some comp science work that we've proposed that will provide different models for cutting

across all these large data sets."

Over the course of the team's research, Thomas said he also hopes to use data to provide visual records of worker mobility – how so many immigrants and domestic laborers came to work on the railroads. New methods for visualization will play a large role.

"I'm really proud and excited to be working on this project," said Leslie Working, a graduate student in history at UNL who has been with the project for years.

Working, who will be project manager beginning in the spring, said the grant will help with more than just displaying the importance of railroad history; it will also open new doors for research.

"I think it gives everyone working on the project a chance to look at a wider scope of questions and issues. With that kind of

backing and support, we'll have a chance to maybe ask bigger questions and incorporate new types of data-mining. We can think about ways we might use data to ask old questions in new ways," she said.

Those new techniques demonstrate much of the project's interdisciplinary importance.

"The tools we develop could be applied to anything," Thomas said.

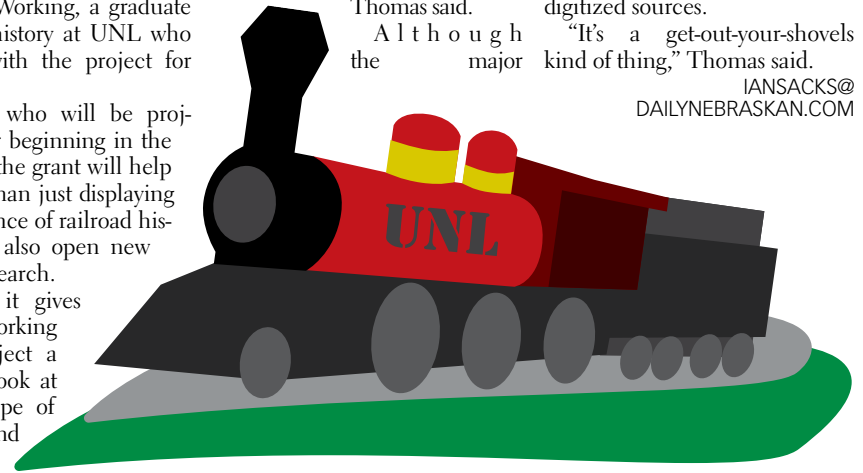
Although the major

beneficiaries of the project will admittedly be high-end researchers, Thomas pointed out that the project's Web site, railroads.unl.edu, is already being accessed by tens of thousands of students across the country.

Like the railroads blazing their way through the west, the project will be cutting new routes through unexplored banks of digitized sources.

"It's a get-out-your-shovels kind of thing," Thomas said.

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