



[Fall 2008](#)

Vol. 4, No. 1

Other stories—

[Director's Message: Fall 2008](#)

[Energy and Emissions in Transportation](#)

Search ALL Issues of NewsBITS

Go

"My plan is to use the campus as a lab, to study students and their transportation patterns, lifestyle, etcetera over time—maybe years and even decades. I think students will like it; they can study themselves, and we will be building up a database."

[PDF of article](#)

Joan Walker: Former undergrad joins ITS faculty



When Assistant Professor Joan Walker arrived this fall from Boston to begin teaching transportation students at UC Berkeley, she felt immediately at home in McLaughlin Hall. The hallways, the office, the names on the doors were like old friends.

Walker, who received her Bachelor's degree in Civil Engineering from UC Berkeley in 1991 and her Master's and PhD degrees in Civil and Environmental Engineering from MIT, was Assistant Professor of Geography and Environment at Boston University until she accepted her recent appointment as an assistant professor in U.C. Berkeley's Civil and Environmental Engineering Department. She has a joint appointment with the Center for Global Metropolitan Studies, which encourages interdisciplinary research.

"I like to tell the students here I took classes from Adib Kanafani, Carlos Daganzo, and Bill Garrison. I worked for Mark Hansen," she said in an interview with NewsBITS. "I also worked for Mike Cassidy when he was finishing up his PhD, and counted cars for him in the basement of Davis Hall."

Although she was transported back in time when she returned to the Berkeley campus, as a faculty member Walker will be teaching her graduate students how to gaze into the future—of planning and transportation—through the crystal ball of behavioral modeling for policy analysis.

Trendspotting

"**What I do is statistical models of behavior,**" she explained. "The idea is, whether you look at sustainability, the environment, even quality of life, there are human agents out there making decisions—supposedly rational decisions. What we want to know is what will happen in society as a result of these human agents making all these decisions."

Typically, behavioral studies in transportation are based in a classic microeconomic paradigm of rationality. In other words, people calculate and compare the value of their transportation options and follow that which works best for them. But Walker says research in behavioral economics raises "serious questions" about humans' ability to choose rationally. In her research she hopes to infuse some of those findings into transportation in order to better predict behavior—and influence it.

For example, the current trend in environmentalism is one she's examining closely. But to determine how humans will be thinking in 20 years requires collecting very detailed data over time to capture such dynamics.

Walker uses statistics as well as psychology and behavioral economics in order to identify attitudes that will frame the decisions of groups of people about where they will live and work in the future. And, for want of better words, fads or trends are really important, says Walker, who won a National Science Foundation Career Award in 2007 for her work in this field. "It's hard to figure out where these trends are going, but in transportation and planning we're trying to do 20-year forecasts, and I think if you miss this piece of it, you're missing a lot."

"My plan is to use the campus as a lab, to study students and their transportation patterns, lifestyle, etcetera over time—maybe years and even decades. I think students will like it; they can study themselves, and we will be building up a database."

She will also use her expertise in the [Amman, Jordan transportation project](#) to determine a fare structure that passengers are likely to respond to positively, including the introduction of smart cards.

"I'll be looking at the riders and trying to get into their heads to help the transportation team building a new system for the city determine how to encourage ridership and how much to charge," she said.

ITS Students

This semester, Walker will not be teaching, but will be overseeing the PhD seminar, where students meet weekly and present their research. Questions and feedback from peers at these seminars help students refine and strengthen their research. The experience also provides good practice for future presentations. In addition, older students mentor newer.

Walker says it is a great introduction to the students she will be teaching and advising. "They do all the organizing. All I have to do is listen and learn more about their research and provide some helpful direction."

In fact, one of the things she likes so much about Berkeley is the caliber of the students. The first graduate student researchers she hired for her projects were so eager to get started that they came up with their own ideas before she had time to meet with them. "I am really so impressed. They are such self-starters!"

Next semester she will be teaching a class in her area: Behavioral Modeling for Engineering, Planning, and Policy. "Because I have this affiliation with the Center for Global Metropolitan Studies, I will try to keep the class very broad. So although I mostly work in transportation, I will talk about these methods for public health, marketing, or whatever."

She is also excited about the breadth of knowledge and level of expertise here at Berkeley. "In my work I need to collaborate with people. I have this very strong statistical knowledge, but I need applications, and those applications can come from anywhere—whenever there's a human involved." She anticipates working with researchers who work more conceptually and qualitatively with human behavior.

[PDF of article](#)