

EDUCATION

I was born in San Francisco, California. I studied Civil Engineering in California at the California Polytechnic State University. Then for 7 years I worked as a Transportation Engineer dealing with the projects connected with California highways, public transport, design projects, bridges, roads and rail systems, and also for a San Francisco airport freeway interchange project. During these years I managed to obtain a Master's degree in Civil Engineering. It was an evening program, allowing working and studying at the same time. And at some point I thought teaching would be interesting. I didn't know if I was good at teaching, but just after I was awarded with the Master's Degree my professor said that they needed someone to teach Engineering Economics. It was a good chance to try myself in the teaching process. During several years I combined my full time job and delivering lectures on such subjects as Engineering Economics, Transportation Planning and Public Transportation in evening courses. Public Transportation is not a common subject, and it was something new. After a few years I realized that I like teaching and certainly I like Transportation and I like thinking about how to make the Transportation system better. However I knew that for starting my career as a full time university professor it was necessary to obtain a PhD. I didn't know if I was good at research or whether I liked research, and I decided to apply to UC Berkeley for their PhD program in Transportation Engineering. I was enrolled and I entered UC Berkeley. I realized that I really liked the program and I liked teaching and then I decided to try to become a professor.

WORK

Twelve years ago I joined Portland State University as an assistant professor of Civil and Environmental Engineering. At that time they were looking for somebody who would focus on Intelligent Transportation Systems (ITS). In the United States ITS is a relatively significant topic. So I met this challenge of developing an ITS laboratory at the university and tried to create the program and to get more students. I spent several years trying to do this and then fortunately we were able to hire other professors and now we have four professors at Civil Engineering and four professors at Urban Planning, totally eight professors and as well Ph.D., Master and Undergraduate students. We cover Transport Engineering and Transportation Planning and we were also successful in obtaining a Federal grant for a University Transportation Center in 2006. We created a center called "Oregon Transportation Research and Education Consortium" (OTREC). We founded many projects and supported many students, so the emphasis of this center is on research and education for Transportation in general. And we focused on advanced technology, integration of transportation and land use and healthy communities. There is another new topic for the University of Transportation; we deal with sustainability problems, and it is a unique combination of topics.

In 2009 I was appointed by President Barack Obama to serve in his administration at the U.S. Department of Transportation and my job there was a deputy administrator of the Research and Innovative Technology Administration called RITA. RITA coordinates the U.S. Department of Transportation's research and education programs, and it works to bring advanced technologies into the Transportation system. RITA also offers vital Transportation statistics and analysis, and supports national efforts to improve education and training in Transportation-related fields. RITA works to ensure that the nation's Transportation research investments produce results for the American people. We were also responsible for funding universities and research centers, and advanced research projects.

I moved to Washington DC for two years and had a very interesting experience from the inside of the federal government trying to help to run this agency. One of the interesting things was that the every administration at the Department of Transportation had its own research program and we were a very small new agency trying to coordinate research across all the modes of transportation. This was an interesting challenge to get the aviation researchers to talk to the highway researchers and to try to get railroad to contact public transport researchers. It was quite interesting experience because traditionally these people do not communicate with each other. I think by talking and collaborating they found that they had more in common than they had imagined before. We were trying to increase collaboration which was something that I was trying to do through my career at the university trying to get social scientists to talk to engineers and universities to collaborate with each other. And also I had some experience with collaborating with some international universities. We brought international students to our laboratory and had several visiting professors.

The position in Washington DC also included ITS program and I was particularly focusing on the national ITS program which is currently focused a lot on research regarding the issue of connected vehicles. The idea is not necessarily a self-driving vehicle but vehicles that can communicate with each other, or communicate with the infrastructure (traffic signals for example). In the USA we have a road safety problem, we have 32 000 – 35 000 fatalities per year on the highway system. The connected vehicle system could prevent up to 80% of those crashes. This was one of the big initiatives that we had.

Than in 2011 I left the U.S. Department of Transportation and returned to the University. I spent one year in the Netherlands at Delft University of Technology and had a wonderful experience with my colleagues there. I had a chance to live in Europe for the first time and to travel around, as well to visit other universities. In that role I was mostly focused on traffic management. The Transport Ministry was trying to identify the next level of traffic management for the Netherlands.

Now one month ago I returned back to Portland State University at my position as a professor. Now I am responsible for both research and teaching in Transportation.

FUTURE OF ITS

The source of the concept of ITS in the Transportation field lies in the sphere of communication in location (GPS). In the 1990s the U.S. government improved GPS accuracy dramatically because previously they had been scrambling the signal but in 1990's President Clinton removed that barrier, so we had quite accurate location capabilities in 1990s. The idea in Transportation is to take advantage from the other developments and manage them.

In my view, managing the Transportation system is not just managing technology but first of all managing people, the mindset, thinking about the way of operating the Transportation system; then it is also giving the users more information and maybe giving them even data to create information from it.

My feeling is that within ITS the idea is that we want to take advantage of this data we may have, of the technological advances, but it is our responsibility to create strategies and make sure that we have people who are educated and trained and have tools to put this into practice. For me it is not about building things, it is about thinking about the system and what the pieces of this system are and how they work together. It is our responsibility to make sure that we are developing a coherent network that includes devices, sensors, users and strategies all together. I think we need to move away from these sorts of doing the work. In the future we need to think how all these pieces will work together.

For example Google is very successful with their self-driving car and they are working to make it legal, but again this is not something that has been driven by Transportation industry. But it is important to remember that Transportation managers will start seeing these vehicles on the road. Some other individual manufacturers will equip their cars with technologies that help to avoid crashes and also complete other driving tasks and here is also a big question – what happens when you mix all different pieces?

The challenge in the future is how to get all these pieces fit together and work properly together. And honestly I don't know who is taking the lead right now. There is a kind of very interesting point where we need leadership and we need some creative people to figure how all this will work together.

My feeling in Transportation is that people should have choices. I remember I had a professor in Berkeley who said for us "Don't do anything in your career that would remove a choice from our citizens from our society" and I think this was a very interesting message that he sent to us. People can choose to drive bicycle, car or public transport or to walk and then within each of those there are also choices, if I am driving I can choose to drive a car that has no technology or I can use one that is self-driving. To me I am quite interested to see how all these different things will go to fit each other in the future. And this society that will offer these kinds of choices is a society that I want to be a part of.

THE ROLE OF ITS FOR PUBLIC TRANSPORTATION

If you think about the Transportation system, we have fleets and flows, so on the one hand we have public transportation which is controlling the mode of transport for the most parts (fleet, manage,

timetable) the same thing goes for other fleets: corporate fleets or logistics fleets, taxi fleets; there are vehicles that government entity or private people want to manage or make sure that they are managed efficiently at the lowest cost and it seems to me that a lot of these technologies will work better on a fleet.

Another point in the U.S. is that heavy trucks have vehicle data system and are standardized across manufacturers; there is interoperability that makes it easier to implement safety technologies in our trucks. But all cars are totally different! Each manufacturer has its own technology. I am a fan of applying some of these new systems in fleets first. Clearly any technology that tries to reduce crashes, congestion, emission, and energy consumption is important for all kinds of vehicles including public transportation, because in many cases public transport vehicles are interacting with other vehicles. And if the public transport system becomes safer and more efficient, more people will use it.

SUGGESTIONS FOR RIGA

The question how to integrate different components of ITS in one common system is a common one for all cities, because different things are built for different reasons, we use different funding and so on. In ITS integration there are several approaches that a country can take. One approach we can refer to an "official approach," which is when the Federal government says that we will not give you money unless you have a plan. And this is how it happened in the U.S. The national government in the U.S. has decided to design an architecture for ITS and it was successfully implemented beginning in 1991. By the way, it is available for free for other countries, and Canada implemented the same architecture like the U.S. did. And of course there are also European equivalents in ITS architecture. On the one hand we say that we want to be sure that all devices are interoperable, data and message sets are consistent with standards that were developed. So, this is the top – down approach. We won't fund you unless you have architecture and you need to show us how these parts will fit together.

But that ignores the human aspects. Who is going to be the one to lead the development of the architecture, in a place like Riga? For example in Portland, Oregon in the USA we have a committee, it is called Transportation in Portland (TransPort), and since about 1995 there have been meetings every month. They have no staff, no budget they just meet and it includes all the levels of the country, state, city, regional government that does Transportation planning. This committee also includes the universities and the interested consultants. It is collaboration in action and it happens because of the individual people who say this is important. It is a forum where people share information and they may even share funding with agencies and make common projects. It requires somebody to be a leader and pool these together and make sure that people don't get lazy and stop attending meetings. That is a sort of the bottom-up approach.

The other point is that not every agency has the expertise. What happens if anybody has done something in Washington D.C. or New York successfully and we want to do something the same in Portland? There is a program in the U.S. called peer-to-peer program, when people come for a couple of days and spend some time explaining what they have done and then these organizations can all learn about what has been successful and what has been not. So, it is a knowledge-sharing program that helps people to learn new things with the help of more experienced people in the field.

It is hard for me to give exact suggestions for your city, because I don't know the structure, but for sure there is someone who has to realize and to look at a big picture. I think you have some mechanisms to do all these. But basically it would be nice to make sure that the right people are talking one to another when projects are planned. I talked about ITS architecture and ITS planning, but for me it is just a map with little symbols such as communication systems, freeway network, and there are many examples of an ITS plan and you can build your own system maybe through European projects using experience of other countries. I am sure that there are opportunities that allow having a visit from people from other countries, for example from the USA.

ROLE OF PEOPLE

Part of what I try to do is to explain that the Transportation field is an exciting field. The classic situation in the U.S. is that Civil Engineering students want to build structures, bridges and so on. I had the same feeling when I was young. But Transportation affects everybody's life. Everybody uses the transportation system, so there is a human aspect when everything you do affects other people. It also brings together multiple disciplines when you build bridges, tunnels, highways, tram lines, road lines, airports; planning

and designing this kind of things require people from all different fields like planning, architecture, design. That is why you need to communicate. All projects involve a lot of players. Knowing how to work with other people from other organizations outside your discipline without feeling that you lose the control of your project is important. So the art of collaboration is one of the things that is important.

You have real communication as one of the important part of working in this field. I always tell my students that you need to have technical background whatever discipline you choose to study, but everyone needs to be an excellent communicator in writing, speaking and even e-mailing. I emphasize for students that if you want to be a leader, communication skills are really important.

The other thing important for students is a needed degree of creativity and a degree of being hungry to learn new things. It is important for students when they study to get some experience like volunteers or assistant researchers in a field that you think you are interested. There are a lot of opportunities for students, such as ERASMUS and other programs. Seeing how it works in other countries is very important, it demonstrates what knowledge I can take from one place to another. You start to think outside your comfort zone what I can take from one place and to apply at my place.

One more thing is the ability to explain technical things in non-technical, easy language. When you need to talk to the public, do not be scared.

CONFERENCE RELSTAT'12 AND COST MEETING

I was lucky to be invited by the COST MULTITUDE group to participate this week. I have been very impressed by your hospitality, organization and making us feel welcome. The quality of the facility is very high, technologies are extremely top notch. I think including some social aspect is also very good, as well as a chance to see Riga. I am quite excited to go on the walking tour in Old Riga and the excursion to Rundale palace. For me personally it was exciting to have a chance to come to your country and your city and probably I wish I could spend a little more time here.

I have not heard about this conference before but it seems that there will be people who would be interested in participating in it in the future. And for the conference I think the overlap of the two COST workshops and the RelStat conference was very effective. In my opinion, it is always good when there are opportunities for people to interact during a conference. You can take advantage of people being in one place and meeting each other that can be very positive. It seems to me that the team organizing the RelStat conference is very good. I feel very much at home with this group and enjoyed it very much.