

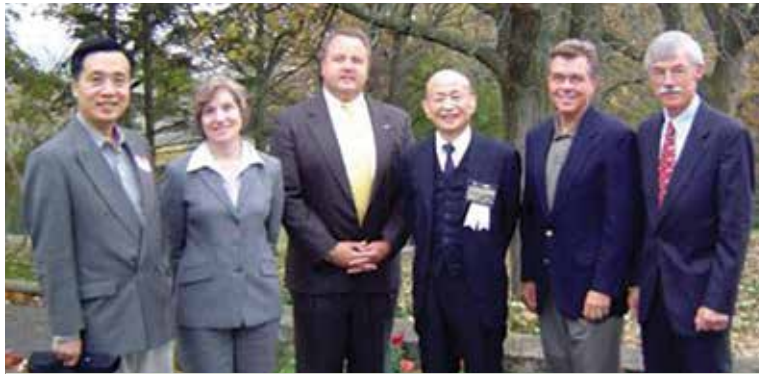


**W**hen David Noyce was named the first Dr. Arthur F. Hawnn Professor of Transportation Engineering in December 2014, it meant far more to Noyce than support for his research and teaching. Hawnn—

who earned his bachelor's, master's and PhD from the department in the late 1950s and early 1960s before going on to a successful career with the Department of Defense and his own consulting firm—established a \$2 million professorship fund in 2002. Noyce had the chance to meet and get to know Hawnn before Hawnn's death in 2012. The two bonded over their passion for transportation engineering and their dedication to UW-Madison.

"Arthur's success was a product of hard work, persistence and determination," Noyce says of Hawnn, who served the U.S. Marine Corps as an interpreter during the Korean War, then emigrated from South Korea and worked many jobs to pay his way through college. "That makes the professorship a little bit more special, when you know the person who provided the opportunity."

## Hawnn's legacy strengthens CEE faculty



*Arthur Hawnn (third from right) with UW-Madison transportation researchers (from left) Professor Bin Ran, Professor Teresa Adams, Professor David Noyce, Emeritus Professor Bill Berg, and Emeritus Professor Bob Smith.*

Noyce is also serving on the search committee for the second professorship that Hawnn's gift supports, the Peterson-Rader-Hawnn Professorship in Civil and Environmental Engineering. The professorship honors Hawnn's parents, as well as two of his mentors: UW-Eau Claire engineering professor and U.S. Marine Corps Capt. Arthur Peterson, and CEE professor Lloyd Rader. While the professorship Noyce received is specifically targeted toward the transportation engineering field, the Peterson-Rader-Hawnn Professorship is available to faculty across the department.

In general, both of the professorships will enable the department to nurture faculty research and teaching efforts in

the long run and to recognize their contributions. Noyce says his professorship will enable him to  
*(Continued on page 3)*

## Air quality and its impact on transplants



**A**s Professor Jamie Schauer travels around the world studying air pollution, he tenaciously reminds people that pollution is a human health issue. That is especially crucial when it comes to particulate matter, an airborne mix of microscopic solid particles and liquids that can arise from any number of sources. Particulate matter varies widely from place to place, and so do its potential health effects.

"I believe that different components of particles are what drive different pathways of disease," Schauer says.

In an effort to trace those pathways, Schauer says, environmental engineers need to collaborate with the medical profession to establish scientific connections between specific health problems and specific kinds and sources of pollution. He recently partnered with UW-Madison transplant surgeon Joshua Mezrich to examine how pollution impacts patients after a lung transplant.

Previous research has shown that lung transplant recipients who live near major roads are at higher risk of developing bronchiolitis obliterans syndrome, in which the body's immune system attacks the new lung. But this research didn't establish a clear medical reason why that should be. And, Mezrich says, except for some people who specialize in lung transplants, it hasn't really provoked the organ-transplantation community to pay more heed to environmental impacts.

"Lung transplants do a lot worse," Mezrich says. "In five years, half of the grafts will be lost. There's something very different about lungs, and maybe part of that is this interface with the environment, and maybe it's something else."

It's hard to single out any one culprit for this disproportionate rate of rejection among lung transplant recipients, because transplant patients and their immune systems are already battling so many stresses. *(Continued on page 5)*



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**G**reetings, UW-Madison friends and alumni, and welcome to the Spring 2015 Conduit from civil and environmental engineering!

While you've no doubt heard about the challenges UW-Madison confronts in the state budget process, your department remains as dedicated as ever to excellence in education and research. Even in the face of proposed cuts to state funding for the UW System, your department is making great strides in providing exceptional value for our students, industry partners and communities around Wisconsin. The stories in this newsletter alone attest to the difference our tireless faculty and generous alumni are making.

One bit of very exciting news is that we now have three fully funded endowed professorships to help us create the future of structural engineering: the C.K. Wang Professorship, the Charles Salmon Professorship, and now the Alain and Jill Peyrot Professorship. The Peyrot Professorship was made possible through the generosity of Professor Emeritus Alain Peyrot and his wife, Jill, along with the Morgridge match program provided to campus by John

and Tashia Morgridge, which provides one-to-one matching for gifts supporting professorships of at least \$500,000. Professorships allow us to retain our best faculty, and recruit star faculty to the department. More importantly, professorships provide faculty with discretionary funds to work in small groups with students on hands-on experiential learning opportunities on innovative ideas. These professorships will provide exceptional faculty for the new structural engineering lab, which is planned for completion in 2016.

We are also very proud that our faculty gender diversity is increasing, with the recent hiring of Andrea Hicks (coming in August 2015) as an assistant professor. Women now comprise more than 20 percent of the CEE faculty, and are raising the bar for all of us. For example, Assistant Professor Christy Remucal recently won the CAREER Award from the National Science Foundation, one of the most prestigious awards for young faculty, and Professor Trina McMahon was recently appointed as a Vilas Distinguished Professor.

Finally, I will be stepping down as chair this summer and moving to the University of Virginia to become dean of engineering. Serving this department and university as a faculty member for the past 25 years, and as chair of CEE for the past four, has been a great honor. I also have tremendous gratitude for the interac-

tions I have had with alumni and friends of the department. We are very fortunate that Arthur F. Hawn Professor David Noyce will be filling my shoes as chair at the end of my term. I am confident that David will lead CEE to even greater success over the next several years.

**Craig H. Benson**

PhD, PE, NAE

Wisconsin Distinguished Professor

[go.wisc.edu/supportCEE](http://go.wisc.edu/supportCEE)

**Thank you for your continued support of the UW-Madison Department of Civil and Environmental Engineering.**

If you would like to make a gift, you have a variety of options, including estate gifts, matching gifts, endowments, and an immediate gift, among others. If you are considering a gift, please contact Ann Leahy for more information on how to give:



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## McMahon receives Vilas Distinguished Achievement Professorship

**Professor Katherine McMahon, along with four other faculty in the College of Engineering, has been appointed a Vilas Distinguished Achievement Professor, one of the highest honors UW-Madison**

**confers upon its faculty.** The award aims to honor and support UW-Madison professors with extraordinary track records in research, teaching, and/or service. Each recipient is provided with \$75,000 in flexible funds over five years to support his or her research efforts.

The Vilas Professorship will aid McMahon's research group as it takes an increasingly computational approach to analyzing the genetics and metabolic workings of microorganisms and how those factors impact natural water systems as a whole—which calls for resources that often aren't covered by traditional research grants.

"The entire field of environmental microbiology is changing because of advances in DNA sequencing," McMahon says. "It's incredibly cheap and easy to generate enormous data sets, but all that ends up giving you is a big pile of letters, and you need to interpret that with programs that run on large computers, both because of the size of the data and the sophistication of the calculations you're running."

McMahon also plans to use the professorship funds to support the work of postdoc Josh Hamilton. Hamilton, who earned his UW-Madison PhD in chemical and biological engineering under Associate Professor Jennifer Reed, is currently studying the metabolic



pathways of a species of actinobacteria that has not even been formally named because so far no one has managed to grow or isolate it in a lab. "This organism is in every lake anybody's ever looked at, and accounts for probably half of the total number of bacteria cells in lake water," McMahon says.

And that means that understanding the organism could be a big help in understanding freshwater systems overall. In particular, Hamilton is homing in on a possible relationship between this organism and cyanobacteria, known for the toxic blooms they form in bodies of water. "We think the interaction between the actinobacteria and the cyanobacteria may help us better understand what controls the cyanobacteria and their blooms," McMahon says.

## Christy Remucal receives NSF CAREER Award

Assistant Professor Christy Remucal's work as an environmental engineer and aquatic chemist centers around problems of how contaminants move through water and how they can be removed. In 2014, as a chemical spill in West Virginia and cyanobacteria blooms in Lake Erie forced utilities to shut off water services to hundreds of thousands of people, Remucal saw an opportunity to fix a crucial weakness in drinking water systems.

"Drinking water systems are really good at getting rid of particles and pathogens, but they're not very good at getting rid of organic compounds, like pesticides and pharmaceuticals," Remucal says. "A lot of them just come in at the intake of a drinking water plant and then come out the other end."

Remucal is exploring how to break down such compounds with a process known as chlorine photolysis. When chlorine is exposed to light, it forms highly reactive compounds known as radicals, which can be very effective at degrading the contaminants Remucal is concerned about. And because most drinking water treatment plants already use chlorine as a disinfectant, chlorine photolysis could be integrated into the existing treatment infrastructure with relative ease. A prestigious National Science Foundation CAREER Award is funding the research.

One obstacle to implementing chlorine photolysis is that it's not yet clear what kind of disinfection byproducts it might form in drinking water. A big part of Remucal's research on this project will involve fleshing out the radical chemistry at work in the process. "When you shine

light on chlorine, the results are going to change based on the pH of the water, the wavelength of light, and those factors will change the kinds of radicals that are formed," Remucal says.

Such processes aren't already being used in water treatment because of a combination of chemical unknowns and because of the way the public, engineers and industry tend to view contaminants. In this respect, Remucal sees her project as an opportunity to push for a cultural shift. "A lot of these pharmaceuticals and other contaminants we worry about are referred to as 'emerging contaminants,' which is kind of a misnomer, because they've emerged already," Remucal says. "They're at really low levels, but do the effects add up? That's a huge question we haven't answered."

In addition to the research, Remucal also is planning to develop online modules on drinking water treatment for the *Introduction to Environmental Engineering* (CEE 320) course she teaches, and for outreach activities to pre-college students around the state. For both young environmental engineers and elementary-school students curious about science, Remucal says the drinking-water module will be an engrossing way to demonstrate the impact environmental engineering has on daily life.

And organic contaminants increasingly will be a problem for drinking water around the world, even outside of environmental emergencies like chemical spills and algae blooms.

"Populations are growing and there's only so much water, so we're going to have to turn to more water that isn't as good of quality," Remucal says. "We're going to need better treatment."



## Hawnn's legacy

(Continued from front page)

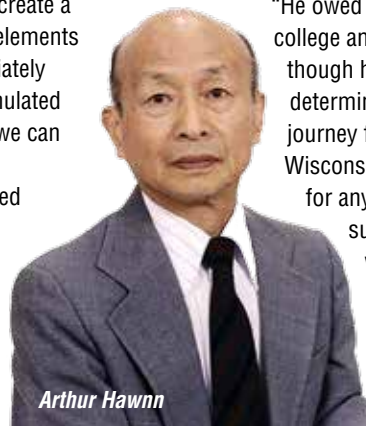
boost the technical capabilities of the UW-Madison Driving Simulation Laboratory, which houses a full-size vehicle for studying driver behavior and comprehension in a virtual-reality environment. He's specifically interested in harnessing LIDAR technology to expand on the environments and situations that can be studied in the simulator. Noyce is working with a Madison-based company, Mandli Communications, whose systems can quickly gather rich LIDAR data on road environments. He also needs to build the computational framework for incorporating LIDAR-derived environments into the simulator.

"What we hope is that we're able to develop a new methodology for implementing LIDAR-based data into the driving simulator in a seamless way. Ideally, we can create a point cloud of all the physical elements along the roadway and immediately apply it to the creation of a simulated visual world," Noyce says. "If we can do that, we'll be national if not international leaders in advanced research that bridges traffic engineering with the driving simulator environment."

As Noyce helps in determining who will hold the first Peterson-Rader-Hawnn Professorship, he's

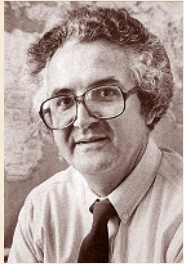
proud to be furthering the legacy of a man he holds up as a role model, and who was serious about giving back to UW-Madison.

"He owed his life, in his words, to this college and department," Noyce says, though he mostly credits Hawnn's determination throughout his far-flung journey from South Korea to Wisconsin to D.C. "He's a role model for anyone that wants to achieve success in their lives. Arthur was a very smart man, but one can never underestimate how far a tenacious work ethic can take you."



Arthur Hawnn

# Engineering professorships power structures legacy into the future



**Alain Peyrot**

**A**lain Peyrot recalls that when he worked as a UW-Madison structural engineering faculty member between 1970 and 1997, he and his colleagues called structural engineering the backbone of civil engineering. Not only was it a huge factor in training Wisconsin engineers for the workforce, it also was one of the department's strongest areas. Over the course of several decades, UW-Madison made a historic impact on the structural field, thanks to the work of Peyrot and many other professors, including C.K. Wang, Charles Salmon, Frederick Turneaure, Edward Maurer, Owen Withey, Kurt Wendt, George Washa, John Johnson, and Bill Saul.

The department now has professorships named for three of those notable structures experts: C.K. Wang Professor Gustavo Parra-Montesinos came aboard from the University of Michigan in 2012, and the department now plans to hire new faculty for the Charles G. Salmon Professorship, which recently became fully funded, and the Alain Peyrot Professorship, supported by a gift from Peyrot himself. Peyrot's gift will be matched with a portion of the recently announced, historic \$100 million gift from UW-Madison alums John and Tashia Morgridge aimed at bolstering faculty support. These professorships, combined with several gifts that support major renovations to the structures lab, will make the UW-Madison structural engineering program of the future worthy of its past.

Wang passed away in 2013 at the age of 95, and Salmon died in 2014—each man leaving behind an incredible legacy in both teaching and research. Wang himself made a \$500,000 gift to establish his namesake professorship during his retirement. Salmon had made a gift in 1990 to establish a student activities fund, and the Salmon Professorship was started with support from many of his colleagues and former students. Just earlier in 2015, Peyrot made a commitment to establish the newest structures-focused professorship. Currently dividing his time between Madison and southern France, Peyrot says he's impressed at the initiative the department has been taking to reclaim its structures legacy, and especially the recognition that physical experimentation is as relevant in this field as ever.

"The hiring of Gustavo and the decisions to build the lab were really a big thing," Peyrot says. "You still have to have hands-on people to understand what's going on."

On a societal level, he says, the Wisconsin civil engineering graduates of the future need to understand how to apply structural concepts in a highly nuanced, case-by-case manner.

"A big thing that people talk about is our decaying infrastructure. It's really in bad shape—I'm talking about tens of thousands of bridges, inefficient buildings, fragile transmission lines and roads," Peyrot says. "New technologies can help with that, but you still have to look at every one of these structures as an individual patient."

Peyrot didn't spend his entire career in academia—his unconventional path through life has included growing up in Madagascar and his native France, a stint in the French military, and founding the successful company Power Line Systems, which developed software for providing 3D analysis, design and management of electrical power lines. He speaks passionately, though, about the fertile environment he enjoyed at UW-Madison.

"In my day, when I came here, there was a much larger number of people in the structures area, but there was also a department of engineering mechanics in the same hallway with probably eight well-known people, so the grad students would take classes in mechanics that would complement the structural program," he says. The department's recent push, including the hiring of Parra-Montesinos and, more recently, Assistant Professor Brock Hedegaard, builds on the ongoing work of Professor Emeritus Michael Oliva, Associate Professor Jose Pincheira, Professor Steven Cramer, and Professors of Practice Kurt Frey and Kirk John Keller, and still involves collaborations with UW-Madison faculty in the engineering mechanics area.

Support for new professorships and facilities will enable the department to put together a new generation of UW-Madison structures heavyweights, says Wisconsin Distinguished Professor and Chair of Civil and Environmental Engineering and Geological Engineering Craig Benson. "This will allow us to build a top-flight structural engineering program at UW-Madison," Benson says. "We're going to take it to national-class, if not world-class, in short order."

**Investing in faculty excellence is a college priority—and one way we can attract and reward star faculty is through endowed professorships. Currently, approximately one-quarter of our engineering faculty members hold a professorship or chair—and our goal is to greatly increase the number of endowed professorships for both junior and senior hires.**

**A gift to the university will enable us to realize that goal: Alumni John and Tashia Morgridge made a landmark \$100 million gift to UW-Madison in support of faculty excellence—and that gift provides a dollar-for-dollar match to other donors who make a gift to endow a professorship (\$1 million), a chair (\$2 million) or a distinguished chair (\$3 million).**

**To make a gift, contact Cathleen Walters, COE associate dean for advancement, (608) 265-8021 or [cgwalters@wisc.edu](mailto:cgwalters@wisc.edu).**

Having worked for many years in the HVAC business before building his own full-service construction and engineering-services firm, Dan Gilbert understands how interdependent civil, electrical, and mechanical engineering are in the real world.

“Think about what you learn as a civil engineer, which is statics and structure, things that don’t move,” says Gilbert, a Madison native who currently is president of Gilbert Mechanical Contractors in the Twin Cities. “You learn how to build with concrete and steel with stress and trusses and so forth. Great ... but all my stuff moves! Water is pumped, air flows, gases are compressed, fire in a boiler burns. It’s different engineering principles and interests.”

Though Gilbert earned his UW-Madison bachelor’s degree in civil and environmental engineering in 1966, he recently made a gift that will support an undergraduate scholarship open to CEE, mechanical engineering and electrical and computer engineering students alike. The scholarship criteria will include academic performance and membership in Gilbert’s old



Dan Gilbert

## Fostering cross-disciplinary construction engineers

fraternity, Phi Gamma Delta. In addition to helping out deserving students, Gilbert also wants more promising engineers to think about careers in construction, and try to approach the field with a more interdisciplinary

perspective. This approach is especially important when it comes to hiring for a versatile contracting company, Gilbert says: “If you’re in my shoes, would you like to hire a mechanical engineer as opposed to a civil engineer, or well-versed electrical engineer?”

Gilbert has spent many years working in the HVAC world, and despite his CEE degree is actually a registered mechanical engineer.

And of course, he points out, success in his

industry goes beyond just mixing technical disciplines. Contractors in construction, HVAC, and other building-related services are called upon daily to combine engineering fundamentals with matters like scheduling, accounting, and matching the needs of people with results.

“Construction demands a broadness of personality,” he says. “It calls for people who have a sales interest, accounting interest, legal interest. After all, we’re not called *constructors*, we’re called *contractors*.”

## Air quality and its impact on transplants *(Continued from front page)*

But the two researchers are investigating whether particulate matter has a unique way of setting off the immune system. The research combines Mezrich’s expertise in organ transplant tolerance with Schauer’s intricate methods for chemically analyzing samples of air pollution. Schauer and his research group developed samples of cigarette smoke, wood smoke and diesel exhaust, then tested those samples on cultures derived from mice lungs.

And in a paper published in December 2013 in the journal *PLoS One*, Schauer and Mezrich showed that the pollution samples increase the formation of Th17 cells, a type of white blood cell that commonly attacks tissue in autoimmune diseases.

Mezrich hopes that by establishing specific mechanisms by which pollution impacts organ rejection—and by publishing his work more frequently in transplant journals, as opposed to immunology or toxicology journals—such research will convince his fellow transplant surgeons to get serious about how pollution affects their patients. In the *PLoS One* paper, Mezrich and Schauer noted that further exploration of these pathways could help doctors develop treatments that head off rejection, such as prescribing medication to block the aryl hydrocarbon receptor, a protein that binds

to particulate matter and touches off the production of Th17 cells.

Beyond these processes that directly link particulate matter to an autoimmune response, Mezrich says it’s possible that pollution could have more subtle and indirect effects on transplant tolerance. If a person spends years inhaling foreign particles, Mezrich says, it’s possible that activity puts the immune system on alert, making it all the more likely to attack when a new organ enters the picture.

“It would make sense to me that, say, if you’re caught in a house fire or exposed to a really high level of particulate matter pollution, you’d want your immune system to get activated,” Mezrich says. “But I could see over time, if you’re constantly exposed to that, it could cause a scenario where you have a lot of inflammation and it could become pathologic.”

When it comes to tracking down other disease pathways, Schauer’s ability to gather samples of the world’s incredibly varied pollution and make it translate to experiments on the molecular level will be crucial. Particulate matter can pose a threat even outside of industrialized or urban areas;



Jamie Schauer



Joshua Mezrich

Schauer points out that one-third of the world’s population still gets its heat from burning solid fuels, including wood, coal, crop waste, and dung. The better we understand how those sources of particulate matter are impacting human health, the more we can prioritize targeting specific forms of air pollution. Schauer believes that environmental engineers and medical researchers can approach that task by working together to craft a forensic approach.

“A lot of people I work with in the medical field have never considered environmental

conditions before, have never worked with an engineer before,” Schauer says.

In this case, the language of engineering and environmental chemistry gives Mezrich an opportunity to change the conversation in the medical community. “I’d like to be able to present it to transplant people and say, ‘look, pollution is causing all these bad things,’ but to Jamie that represents so many things that can change over time,” Mezrich says. “Even if you find something at the cellular level, what are people really being exposed to?”

# Mapping Wisconsin traffic deaths

The public generally hears about deadly traffic accidents one at a time, seeing the occasional news item or a grisly crash site on the side of the road. But it's now easier for Wisconsinites to see the bigger picture of traffic fatalities, thanks to an interactive map created by the UW-Madison Traffic Operations & Safety (TOPS) Lab and Madison news website Channel3000.com. ([go.wisc.edu/traffic-map](http://go.wisc.edu/traffic-map))

The map, which went live in August, plots the locations of fatal traffic accidents across the state dating back to 2001, all drawing on the data TOPS researchers gather from state agencies and Wisconsin's 72 counties. Users can filter the data by a particular year and by six different types of incidents—alcohol, bike, speed, pedestrian, construction zone, and motorcycle—that highlight the key behaviors and circumstances involved in traffic safety. While this information wasn't previously inaccessible to the public, TOPS Lab researchers saw a need to improve access to it for a broader audience.

TOPS Lab IT program manager Steven Parker says the researchers worked with the Wisconsin Department of Transportation (WisDOT) Bureau of Transportation Safety (BOTS) and Channel 3000 web developers to create an easy-to-use, Google Maps-based version of the data TOPS has been gathering for years. Parker has already spent years thinking about how to map traffic accidents, especially to help county-level traffic safety commissions, which are required to conduct quarterly reviews of fatal crashes. "There really traditionally has not been a good way to do this," Parker says. "Traffic safety commissions often have large posters with thumbtacks."

The data also reflects years of efforts to persuade state and county officials to provide regularly updated information on traffic incidents. By making the map part of a more public conversation, Parker hopes to further persuade officials of the continuing importance of tracking and reporting crash data. "Something like this helps because there's more exposure to the map and there's a feedback loop," he says. "People see that what they're doing has value and is being looked at by others."

And it's not as if the public doesn't already have opportunities to get in on the traffic-safety conversation—county traffic safety commission meetings are already open to the public, for example—but Parker hopes the map will make citizens more enthusiastic about it. "Traffic engineering and law enforcement certainly play an important role, but our system of government depends on an informed and engaged public," he says.

Doctor Arthur F. Hawnn Professor of Transportation Engineering and TOPS Lab director David Noyce says the fact that this body of information is available on a news website reflects a huge shift in attitudes among state officials and traffic researchers. "We used to be quite guarded about how

safety data got out and when it got out—and now we've gone through a complete 180 about being completely forthright and open," Noyce says. "The key is we have learned, in a similar way to police departments announcing where the speed traps are going to be each day, that communicating safety



Steven Parker



David Noyce



information is very effective in transferring the message to the public and leading to the desired outcome."

Noyce also thinks that where officials once saw a potential for public outcry—for example, data about a particularly crash-prone intersection might spark outrage and demands for state action—they now see an opportunity to get citizens engaged in improving traffic safety and at the same time, raise awareness of dangerous behaviors that can cause accidents. Simply filtering for "2013" and "alcohol" causes dozens of markers to appear on the map, and each marker represents at least one death.

In the future, visitors to the Channel 3000 site will see a link to the map next

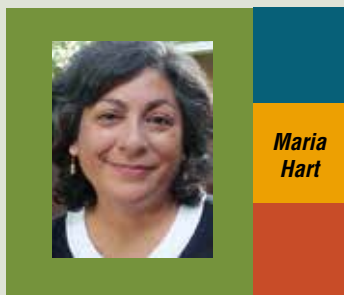
to stories about individual traffic fatalities. Parker says that, ideally, the map's presence will encourage people think more about these incidents in the aggregate—and to consider overarching safety issues that drivers and state and local officials can tackle together. Meanwhile, TOPS is working with WisDOT BOTS to update the data that feeds into the map on a daily basis.

"We get requests almost every day from the public for crash data, and folks use it in a variety of ways," Parker says. "I wouldn't want to try to limit the use of that data, but this is a way that people can look at where these crashes are happening."

**M**aria Hart and Stephanie Ivey want their fellow transportation researchers to look beyond roads, distribution centers and ports, and to think more about the neighborhoods that co-exist with America's freight networks.

Hart, an associate researcher with the UW-Madison Center for Freight and Infrastructure Research and Education (CFIRE), and Ivey, an associate professor of civil and environmental engineering at the University of Memphis, recently began what may be the first study by planners and civil engineers of how freight operations affect the livability of nearby communities. They focused on Memphis, which is one of the major logistics hubs for shipping in the United States, surveying residents in both "freight-centric" areas (those near major shipping facilities) and non-freight-centric areas about their definitions of livability and how they feel freight impacts their quality of life.

"We've been focusing a lot on moving freight in and out and what kind of freight it is, and where it's going," Hart says.



**Maria Hart**

"But now we're talking about the externalities of freight."

They soon found themselves talking about much more than just the obvious problems you'd expect, like air quality and noise. As residents brought up concerns ranging from rats to crime

to the presence of strip clubs, the two civil engineers realized they needed to come up with a consistent, quantitative way to analyze the nebulous concept of livability. "There are so many other things that residents see as the biggest priority that it may or may not be directly related to transportation," Ivey says.

The most important freight-centric neighborhood in Memphis is along Lamar Avenue, which connects Memphis International Airport, an intermodal terminal operated by BNSF Railway Co., and many warehouses and distribution centers. While crucial to the area's logistics industry, the Lamar corridor suffers from congestion, poverty and blight. Freight isn't causing all those problems—and residents in the study didn't really blame freight for them, either.



## Reconciling freight and community

But Hart sees an opportunity for communities and freight operators to work together and head off underlying problems, from emissions and noise to the inconveniences of having a lot of large trucks pass through one's neighborhood. These factors have an intriguing impact on the kinds of discussions residents want to have about their future of their neighborhoods. Even as more cities come around to the benefits of bike lanes, paths and more complete sidewalks, residents in areas like the Lamar corridor told the researchers the conversation needs to start with more immediate issues, including crime, poorly maintained property, and unemployment.

"In areas where there's lots of crime, it's hard to make any inroads on livability unless you diminish the crime," Hart says, "Having a trail going through your neighborhood is more scary. You don't know who's going to come down your trail. And if you get trucks off neighborhood roads, maybe you could bike, but you're not going to bike with trucks coming down the roads."

The good news is that Hart and Ivey found residents eager to talk about these problems, as well as the positive features of their communities, to delve into what livability means to them. And Hart has also seen instances around the country where large freight centers and residential neighborhoods co-exist more healthily, thanks to proper noise barriers and separate entrance roads for freight and residents.

Hart would like to see a culture that recognizes both that enthusiasm and the needs of freight operators.

"From the freight side, we talk about preservation of freight, but on the community side it's preservation of the community," Hart says. "The two don't know how to talk to each other yet."



## Save the dates!

Each year, the College of Engineering hosts several alumni events around the country. Save the date for an event near you—and if you'd like us to add you to the invitation list for a specific event, please contact Stephanie Longseth, (608) 265-3496 or slongseth@wisc.edu.

**January 13**—Houston, TX

**February 18**—Bonita Springs, FL

**March 26**—San Francisco, CA

**May 21**—Seattle, WA

**June 26**—Chicago, IL

**July 17**—Fox Valley, WI

**August 20**—Twin Cities, MN

**September 15**—Milwaukee, WI

**October 4**—Washington, D.C.

**October 16**—Madison (*Engineers' Day*)

**TBA**—San Diego, CA



## College of Engineering

UNIVERSITY OF WISCONSIN-MADISON

Department of Civil & Environmental Engineering  
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## BADGER CIVIL ENGINEERS

**M**ike Duckett says it took some hindsight to fully grasp the value of his time earning a UW-Madison bachelor's degree in civil and environmental engineering in 1974, followed by a master's degree in 1975.

"The one thing I reflected on recently is that while you're living that life as a student, it's a whirlwind and you don't have the ability to appreciate what you're doing and accomplishing, and what the university is doing for you," Duckett says.

Currently, he oversees Miller Park as the executive director of the Southeast Wisconsin Professional Baseball District. Duckett's graduate work under the late Professor Paul Wolf—using aerial photography to conduct a photogrammetric analysis of erosion on the Lake Michigan shoreline—doesn't seem to have much in common with managing the Milwaukee Brewers' home stadium. But the research methods he used, which at the time were considered cutting-edge and novel, helped him form habits that aid his work today.



"Because it was a leading-edge study, it taught me how to manage issues and challenges and people, because we had a team working on it and I was just one of the team members," Duckett says. "The best teacher is experience, and Professor Wolf was a good leader in helping us solve problems and approach problems as a team."

Duckett has been giving back to the CEE department with a \$500 yearly pledge for four years now, and has also served several terms on the CEE visiting committee. Gifts like Duckett's add up to a very important

## RESPECTED AND ALWAYS PREPARED

part of the department's fund-raising, and for Duckett, his pledge is primarily about the principle of making sure future CEE students receive the high-quality training that's proven so crucial to him.

As chair of the visiting committee, Duckett says he's seen a constant effort from the department to stay up with the ever-changing skills civil engineers need to make an impact in the field. He credits the department's leaders with enhancing real-world skills through capstone design courses, bringing in more professors of practice, and bringing in civil engineers from industry to speak with students. In his pre-Miller Park job at the engineering firm HNTB, Duckett ended up hiring younger CEE grads, and found them to be well-prepared to get going in the real world. Given his own experience, he says, that's not surprising.

"They really did prepare me to be an engineer, and you get so much respect from the engineering industry because you are a UW-Madison graduate," he says.