

MODERN MOBILITY

Students at Art Center in Pasadena are designing tomorrow's cars with more than looks and performance in mind

INTERVIEW BY JOHN LEHRER
PHOTOGRAPH BY KEVIN KNIGHT

What do such automotive icons as the Corvette Stingray, the Mazda Miata, the BMW Mini, and the Ford F-150 have in common with the Mercedes-Benz CLS550 luxury sedan, the Ford Taurus and Fusion, the exotic Ferrari F430, and the Tesla Model S, an electric sports sedan that's created more buzz in the automotive world this year than any other vehicle?

All of these cars sprang from the minds of graduates of Art Center College of Design in Pasadena, which has been home to a world-class transportation design program for more than a half century. These designers conceptualize vehicles for major international automakers, more than a dozen of which—from Acura to Volkswagen—have studios in Southern California.

Geoff Wardle is executive director of Art Center's new graduate program in transportation design. Educated in Britain, he has worked as a designer and consultant for numerous automotive companies and has helped shape Art Center's undergraduate curriculum. Westways recently talked with Wardle about the future of personal mobility and how Art Center is preparing its students to design cars for the coming decades.



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Art Center's Geoff Wardle (center) is challenging his students to look beyond car design to the entire spectrum of transportation.

How is automotive design changing?

I believe that in the next 20 years, we're going to see more fundamental changes in how cars function and how we use them than we've seen in the history of the auto industry.

Why is that?

For a lot of reasons, but in particular, these days cars are too often stuck in traffic, as Southern Californians know. Still, most people would rather get into their personal capsule every morning than ride a bus or other public transit, even if they have to twiddle their thumbs on the 405 for 45 minutes. We have to deal with that. Meanwhile, we're unlikely to see huge investments in building more California roads, so we have to find better ways to use the roads we've got.

How will we get around in the future?

Despite today's challenges, the future of mass transportation should include the automobile. But cars must be cleaner, lighter, and more energy efficient. One of today's absurdities: A typical driver weighs 150 pounds, and a typical car weighs 3,000 pounds—20 times the driver's weight. In L.A., 85 percent of vehicles usually carry just one occupant. Almost all of the energy cars consume moves the vehicles, not the occupants—that's insanely inefficient.

Our notion of car ownership is also likely to shift. Instead of just designing, building, and selling cars, car companies may sell "personal mobility"—more like phone companies, which discount a phone and make their money on the service plan.

So instead of shopping for a car, I'll be looking for a "total mobility package." I'll say, "This is my budget. These are my requirements. What can you offer me?" I might have access to multiple vehicles—the right tool for the job. Maybe I'll use a single-occupancy vehicle to commute, but an SUV for family weekend camping trips or picking up furniture at IKEA.

How would that kind of system work?

It works more easily with automated cars, which I feel will be a huge part of our future. The promise of automated road vehicles is that they won't collide, as they self-organize seamlessly down the infrastructure. Because they're inherently safer, they can be smaller and lighter.

Then it all falls into place. You get the use of exactly the vehicle you want, when you need it. And when you're finished, it goes back into circulation to take care of somebody else's needs. The concept is similar to renting a car on vacation—except the car is self-driving and it gets delivered to you automatically, according to the terms of your mobility plan.

Will people accept using cars this way?

As the technology matures, I see a natural migration toward this total mobility model, especially among younger generations, who appear to prefer being part of a group and are used to rapid change. Ironically, most of the people who might resist have no problem turning up at an airport and renting a car for a week.

Simultaneously, more and more features on cars are



(Clockwise from top) Wardle and student designers are contemplating and conceiving cars of the future—such as autonomous vehicles that allow you to do other things during your commute besides drive (bottom right) and vehicles designed to be used for more than just transport (bottom left).



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becoming automated. It started with antilock brakes, which override the driver's direct control when the brakes can do a better job. People accept them now, and all newer-model cars have antilock brakes. Then there's traction control. For many guys driving their Ferraris and Porsches, the only reason they don't end up off the road is not because of their driving skills but because their cars have traction control, which senses, "This guy's losing it. I'm going to deny him his full 400 horsepower."

The list goes on: lane-departure warning systems, adaptive cruise control, and so forth. At some point, people will say, "I might as well just let the technology take over." Then commuting time could be spent on something more productive, like sleeping, reading, or talking with friends and family.

How are you preparing students at Art Center to help shape this future?

Our undergraduates acquire the skills, tools, and knowledge they need to design hardware, usually cars. At graduation, they're comfortable presenting ideas to their own community—design chiefs from Honda or Ford or whoever's interested in their projects. On the other hand, our graduate students need to convince the movers and shakers of the transportation world who are not designers—urban planners, architects, elected officials, and CEOs of car companies—by asking them, "What bigger issues should we be addressing? How can we make transportation better in the future?" Not just automobiles—the entire

spectrum of transportation. Our students should tell them, "This is what you need to think about, and this is why."

To make a positive impact, designers must roll up their sleeves and get involved in politics and policy making, especially when it comes to transportation. I want our students to understand they can't make real changes just from a drawing board or a computer screen. They have to talk to the people who set up the rules and regulations.

So the importance of design is more than just creating an attractive product?

We want to create products or services that excel visually and experientially, of course. But first we have to ensure that we're designing something of positive value to customers, communities, and enterprises. Ultimately, good design is asking fundamental questions about sustainably better ways of living that people will love.

Educationally, certainly in transportation, we have two missions: overtly to educate students to be successful in their careers and covertly to equip them to reeducate the industry they enter, influencing its thinking and its future.

The future of transportation is so important that we must bring all its stakeholders into the equation—urban planners, policy makers, engineers, social scientists, architects, and so on—to ensure the best possible outcome. And design is the driver. **W**

John Lehrer is a regular contributor to Westways.