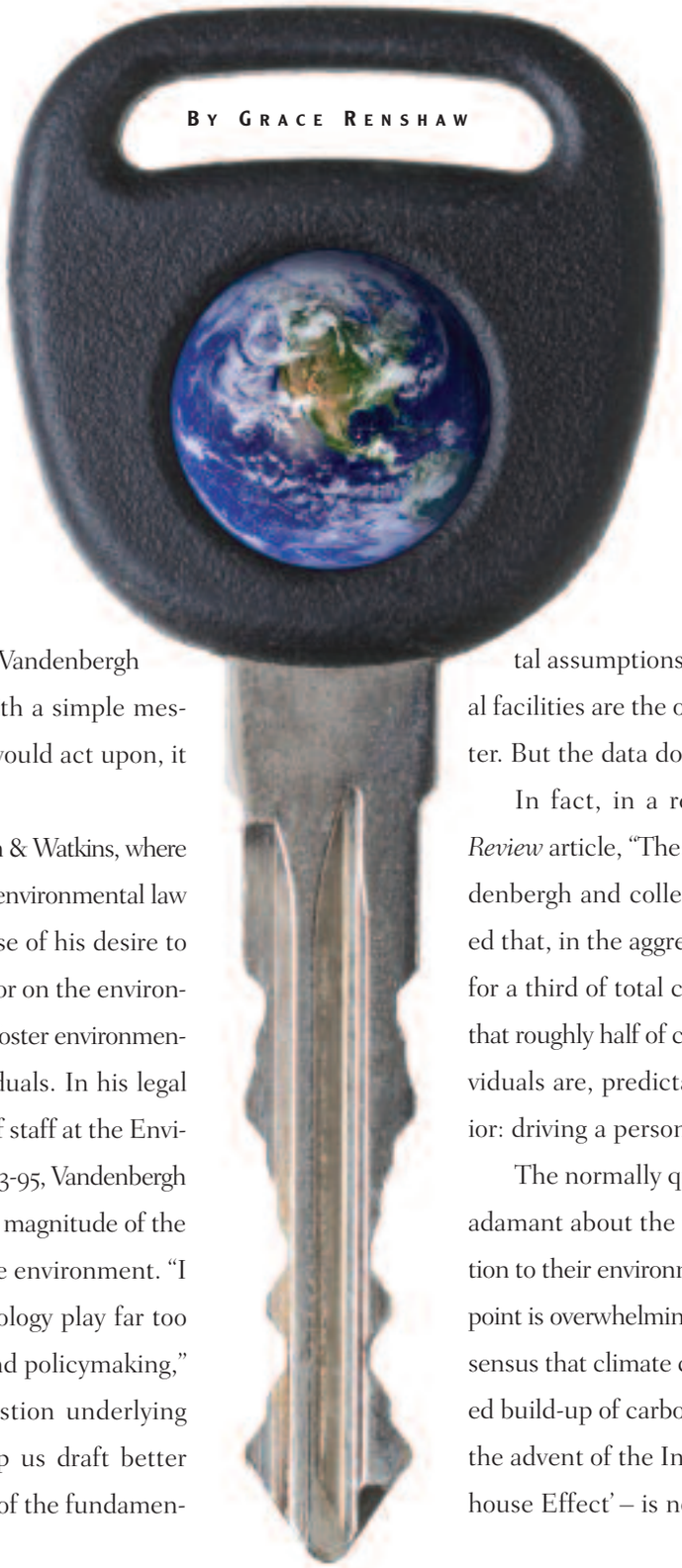
THE CAMPAIGN TO END AMERICAN IDLE

Mike Vandenbergh wants to change your driving behavior – for a start.



By Grace Renshaw

If Vanderbilt law professor Mike Vandenbergh could reach every American with a simple message he could be certain they would act upon, it would be this: Stop idling your car.

Professor Vandenbergh left Latham & Watkins, where he was a partner in their D.C.-based environmental law practice, to teach law in part because of his desire to study the impact of personal behavior on the environment and the ways in which law can foster environmentally responsible behavior by individuals. In his legal practice and during a stint as chief of staff at the Environmental Protection Agency from 1993-95, Vandenbergh was haunted by his realization of the magnitude of the impact of individual behavior on the environment. "I found that preconceptions and ideology play far too great a role in environmental law and policymaking," he says. "What I try to do is question underlying assumptions in ways that will help us draft better laws and make better policies. One of the fundamental assumptions Americans make is that industrial facilities are the only sources of pollution that matter. But the data do not support that conclusion."

In fact, in a recent *New York University Law Review* article, "The Carbon-Neutral Individual," Vandenbergh and colleague Anne Steinemann calculated that, in the aggregate, personal behavior accounts for a third of total carbon emissions in the U.S., and that roughly half of carbon emissions generated by individuals are, predictably, the result of a single behavior: driving a personal vehicle.

The normally quiet and reserved Vandenbergh is adamant about the need for individuals to pay attention to their environmental impact. "The science at this point is overwhelming," he says. "There is scientific consensus that climate change caused by an unprecedented build-up of carbon dioxide in the atmosphere since the advent of the Industrial Revolution – the 'Greenhouse Effect' – is now unavoidable, " he says.

The consensus Vandenbergh refers to is presented in a landmark report issued by the Intergovernmental Panel on Climate Change, an international consortium that includes hundreds of scientists. "The IPCC report has been adopted by 113 governments, including our own, and it concludes that there is greater than 90 percent probability that the warming that has occurred over the past 50 years is in part the product of human activity," Vandenbergh explains. He highlights some of the report's conclusions at the beginning of a presentation about changing individual behavior, which he has delivered to law faculty at the University of Chicago, UCLA, Georgetown and other schools, as well as to the faculty and administration at Vanderbilt Law School. "The IPCC's 'best estimate' of the global temperature increase by the end of the century is five degrees Fahrenheit, a temperature the IPCC suggests will generate a substantial rise in sea level due to heat-induced expansion of the seas and melting glaciers," he says. The report also notes the fact that 11 of the warmest years since 1850, when people around the world began keeping reliable temperature records, have occurred since 1995. "The short-term target adopted by many states and local governments is to level off our carbon emissions," Vandenbergh says. "The long-term target is to reduce them by 60 to 80 percent. Both presidential candidates support a 'cap-and-trade' bill to reduce emissions."

Vandenbergh emphasizes that the United States, which was responsible for a fourth of the world's carbon emissions in 2000 and has long consumed much of the world's oil, will need to reduce its emissions and to put pressure on other world powers to do the same. "China and India are rapidly developing as industrial powers, and that compounds the difficulty of meeting these targets," he says. "Individual energy consumption in the U.S. represents eight percent of the world's total emissions – more than the total emissions of any country in the world other than China. We can't assume that other countries will control or reduce their emissions if we don't step up to the plate ourselves. We can reduce our emissions, though, and use consumer demand to put market pressure on China and India to reduce their emissions." Vandenbergh's forthcoming *Southern California Law Review* article, "Climate Change: The China Problem," demonstrates how consumer behavior and supply-chain contracting efforts can create that market pressure.

7 EASY WAYS TO REDUCE YOUR CARBON EMISSIONS

Stop idling your car. Idling longer than 30 seconds from a cold start or 10 seconds when the engine is warm wastes gas and money and increases wear and tear on your vehicle.

Keep tires inflated properly. Underinflated tires cause a car to use more gasoline.

Reduce 'stand-by power' use by unplugging computers, televisions, cell phone chargers, microwaves and other appliances when not in use. Many electronic devices use surprisingly large amounts of power even when turned off.

Adjust your thermostat 2 degrees higher in the summer and 2 degrees lower in the winter.

Reduce the temperature in your water heater to 115 to 120 degrees F.

Change air filters in your motor vehicle and home HVAC system at regular intervals.

Substitute Compact Fluorescent Lights (CFLs) for standard incandescent lights.

In the U.S., cities are surrounded by vast suburban sprawl, well-developed public transportation systems are limited to a few major cities, and commerce depends heavily on a vast network of interstate highways. Vandenbergh knows that it will be difficult to change commuting patterns in the near term, although he notes drily that rising gasoline prices offer a strong inducement to use public transportation where it's available. He focuses instead on identifying individual driving behaviors that contribute significantly to carbon emissions that people might be willing to change. The common practice of idling cars was an obvious target. "Drivers who idle their cars and light trucks in driveways, school pick-up lines, to 'warm up' a car or while waiting in fast-food or bank drive-through lines account for 17 billion pounds of carbon dioxide emissions each year," he says. "As a basis for comparison, industrial aluminum production currently accounts for 13.7 billion pounds of carbon emissions and petrochemical production for 3.3 billion pounds."

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Eliminating all idling is impossible, but the research Vandenbergh and Steinemann published in the *New York University Law Review* indicates that, if encouraged by a concerted effort supported by an effective public relations campaign, Americans could reduce carbon emissions related to vehicle idling from 17 to five billion pounds a year, while saving several hundred million gallons of gas. "That's a decrease of 12 billion pounds," he says. "If you learned to drive in the 1960s or '70s, you probably were told that on cold mornings you should warm your car up by letting it idle in the driveway for an extended period. Today's cars are designed to warm up immediately. If the car is cold, the most you need to allow it to idle is 30 seconds after you start the engine. If you're waiting to pick your child up from school, turn off your engine. If the line of cars in the drive-through is long, park and walk in. Any time you idle your car longer than 10 seconds, you're wasting money and gasoline and increasing the wear and tear on your vehicle as well as your energy use and carbon emissions."

Vandenbergh chose to focus on the impact of individual behavior on the environment because it was a big issue hiding in plain sight. "A single individual's personal energy, resource consumption and carbon dioxide emissions may seem inconsequential when compared to industrial consumption and emissions," he says, "but, in the aggregate, personal behavior has a huge impact." He also realized that

NO FREE PASSES

2008 graduate Justin Leck's paper proposes a change that might encourage the United States to ratify the Kyoto Protocol.

When students in Professor Will Martin's international environmental law class conducted a mock Kyoto Protocol negotiation last fall, the teams representing various countries found themselves struggling with a fundamental element of the protocol. Countries are divided into two simple categories: Annex 1 (developed) and Annex 2 (developing) countries. Developed countries that ratify the protocol voluntarily obligate themselves to reduce their greenhouse gas emissions and to submit an annual inventory of their emissions after they ratify the protocol.

While developing countries, a category that includes India and China, do not commit to any restrictions on their greenhouse gas emissions, they do agree to the terms of the protocol's Clean Development Mechanism, which allows developed countries to use investments in projects that reduce emissions in a participating developing country as an alternative to undertaking similar but more costly emissions reductions within their own borders.

As members of the class representing different countries attempted to reconcile the differing priorities and concerns of countries at all stages of industrial development, 3L Justin Leck proposed an innovative solution: increasing the number of categories into which countries are divided. "A two-tier system creates inequities and leaves lots of countries with free rides," he explains. "I realized an agreement could not be reached until something different was done about India and China. Everyone agreed that they shouldn't have the same obligations as the U.S. or E.U. countries, but everyone also felt they shouldn't go completely unchecked."

Leck proposed that the number of categories into which countries at various stages of development are divided be increased to four, and that responsibility for reducing greenhouse gas emissions be parceled out along a broader continuum. He also provided an objective method of categorizing countries. "I developed a calculation that ranks every country in the world according to their emissions per capita and their Gross Domestic Product (GDP) per capita, and I used it to rank countries from 1 to 177." According the Leck's formula, the United States ranked second among developed countries, right behind the first-ranked United Arab Emirates. India, China and Brazil fell into an intermediate category on Leck's continuum.

Leck's proposed solution received such a positive reception that Professor Michael Vandenbergh agreed to supervise an independent research project to allow him to develop his idea during his final semester of law school. In May, Leck's paper, "The Kyoto Continuum: Expanding the Annex Classifications of the Kyoto Protocol," won the Jon E. Hastings Memorial Award, an annual writing competition sponsored by the Tennessee Bar Association's Environmental Law Section. Leck plans to continue working with Professor Vandenbergh to refine the paper for submission to scholarly journals as well as entering it in another environmental writing competition sponsored by Harvard Law School that deals specifically with proposals for a post-Kyoto framework.

"The main part of this paper involved developing the continuum and dividing every country in the whole world into the categories," Leck says. "The framework I've proposed provides the foundation of a possible policy, because it doesn't put all of the responsibility on just a few nations while leaving the rest of the world with a free pass. Now I want to focus more on creating the proper incentives for developed and undeveloped countries to ratify this new system. The countries that can afford to help pay to fix the problem – and are more responsible for causing the problem – should bear more of the burden. But if the whole burden rests on just a few countries, as it does under the current climate treaty, those countries don't have much of an incentive to ratify such a treaty or to comply with its terms. And since developing countries currently have no responsibilities under the Kyoto Protocol, the proper incentives must be installed to encourage them to adhere to the new restrictions and limitations the new system imposes."

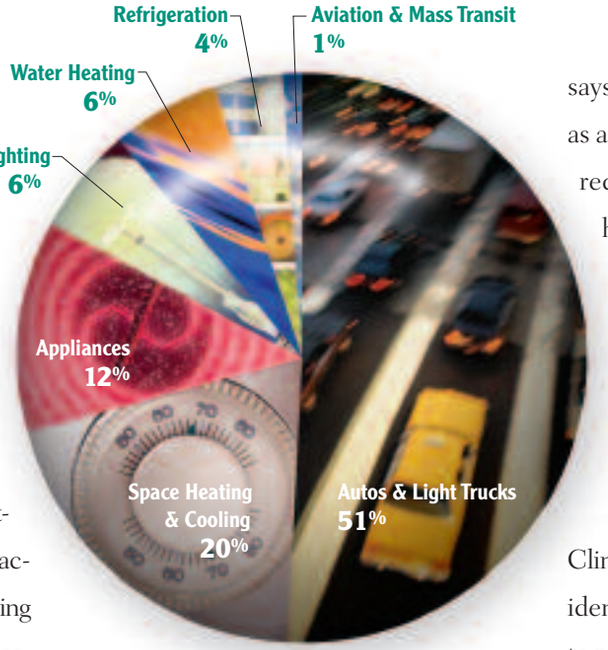
Leck, who graduated this May, will join Withers Bergman in New Haven, Connecticut as an associate this fall.

— Grace Renshaw

changing individual behavior on a grand scale wasn't a mission legal scholars and policymakers could achieve by working alone. Last year, he joined with scholars in Vanderbilt's Earth & Environmental Sciences, Political Science, and Psychology departments as well as the Nursing, Engineering and Management Schools to form the Climate Change Research Network, a coordinated effort by a team of faculty and graduate students that is conducting theoretical and applied research addressing individual and household behavior. "One of the things I like most about environmental law is that it provides opportunities for interdisciplinary work with social, biological and environmental scientists as well as other legal scholars," he says. "The task of finding practical, effective ways to influence individual, daily behaviors that contribute to carbon emissions has been largely unexplored by academicians and policymakers, which makes it exciting and attractive to those of us in the Research Network. We also want to know how taking small environmental steps in your own life will affect civic and corporate behavior."

Vandenbergh believes that people will voluntarily use less energy if they have access to reliable information about their energy use. "Studies show that people who receive real-time feedback about their household electricity use tend to use less energy," he says.

Once people learn the true costs of idling their cars to the environment and to their wallets, he hopes they will seek other ways to save money and the environment, and find good information to guide their efforts. "If every American can reduce his or her carbon emissions by one percent, we decrease our total carbon emissions by 41 billion pounds a year," he says. In a forthcoming *UCLA Law Review* article, "Personal Carbon Emissions: The Low-Hanging Fruit," Vandenbergh and Vanderbilt colleagues Jack Barkenbus and Jonathan Gilligan outline seven individual behavior changes that could save billions of dollars and reduce emissions by roughly 150 million tons – reductions that are cheaper and larger than many initiatives currently under consideration in Washington.



Household and Transportation CO_2 Emissions

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Vandenbergh served on an informal environmental advisory committee that Nashville Mayor Karl Dean formed soon after taking office in fall 2007 and was pleased when Mayor Dean recently urged drivers to reduce motor vehicle idling as part of a new effort to reduce energy consumption. He also serves on Tennessee Governor Phil Bredesen's state Energy Policy Task Force. "We are examining the elements of a new energy policy that will reflect the increasing cost and limited supply of energy," he says. "After the energy crisis of the 1970s, as a nation we walked away from efforts to reduce energy consumption. Now, we have equally pressing economic and environmental needs to reduce energy consumption, and we find we haven't conducted the basic and applied research necessary to understand how to address the problem."

Vandenbergh and his colleagues in the Climate Change Research Network hope to identify cost-effective, non-intrusive ways to reduce energy consumption. "Our team includes environmental scientists and engineers, social scientists, health experts, legal experts and policy experts," he says. "None of these experts, working in isolation, can address all of the problems we face. Working together, I'm optimistic we can."

A SMALLER FOOTPRINT

Thomas Wuertenberger, a graduate of the University of Augsberg who serves on the law faculty at the University of Freiberg in Germany, chose to pursue an LL.M. at Vanderbilt during 2007-08 specifically to study environmental law with Professor Mike Vandenbergh. His thesis, which explored ways to reduce individual energy use and, thus, carbon emissions in his home country of Germany, was modeled on Professor Vandenbergh's research on addressing individual behavior in the United States, and Wuertenberger won the LL.M. Research Prize for submitting the best research and writing project of his class.

Wuertenberger's year at Vanderbilt was his first visit to the U.S., and one of his biggest surprises was "the incredible amount of energy Americans use every day. I arrived in July, when it was really hot outside," he recalls, "but inside the buildings on campus, it was so cold I needed a sweater. And the refrigerator in my apartment was huge – much bigger than the refrigerators people use in Germany."