

Is Tobacco Research Turning Over a New Leaf?

Scientists developing reduced-harm tobacco products increasingly rely on tobacco industry funding, but some universities and grant organizations want to forbid it

A 65-year-old man sitting at a small table in a lab at Duke University Medical Center in Durham, North Carolina, asks for a cigarette, his twelfth in less than eight hours. A researcher is happy to oblige. As the man lights up, a swarm of technicians buzz around him, drawing blood from a catheter in his arm, making him exhale into a sensor, and administering cognitive tests.

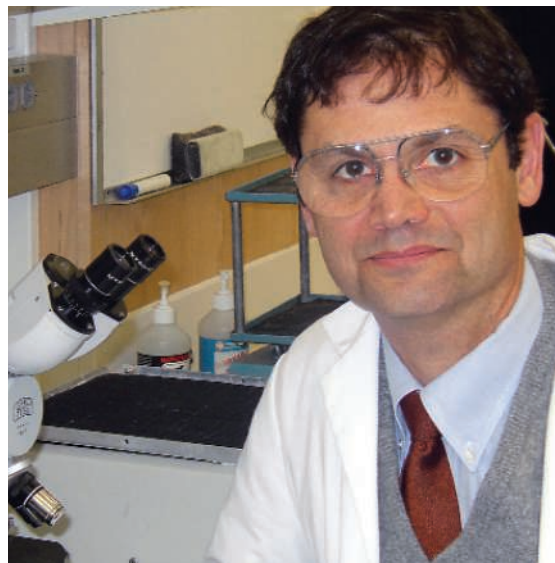
The experiment, led by neuroscientist Jed Rose, focuses on the volunteer's response to a cigarette called Quest, made from tobacco that's been genetically engineered to contain less nicotine. Rose directs the university's Center for Nicotine and Smoking Cessation Research, dedicated to helping smokers kick the habit. He sees the Quest study as an important step in the center's mission because it indicates that smokers of this new product inhale less deeply than smokers of an earlier "reduced-harm" product—the low-tar cigarette—and may therefore be able to decrease their dependence on tobacco. But the work is controversial. Quest's maker, the Vector Tobacco Company of Research Triangle Park, North Carolina, paid for the study, and tobacco giant Philip Morris funds the center.

Since the late 1990's the tobacco industry has provided university researchers with millions of dollars to help develop a new class of reduced-harm products—including modified cigarettes like Quest, tobacco lozenges, and nicotine inhalation devices—ostensibly to reduce the hazards of smoking. Advocates say the industry has turned over a new leaf and is now serious about improving the safety of its products. But critics, who cite the industry's efforts to manipulate science over the past 50 years, see nothing but the same old smoke and mirrors.

Anti-smoking activists tried to stop tobacco's research juggernaut more than a decade ago—and won some battles. But industry funding is flourishing, igniting a debate on some campuses over whether universities should ban tobacco money and whether grant organizations should deny funding to individuals or schools that take this money—as Britain's Wellcome Trust already does and the American Cancer Society is about to do.

It's not a simple issue, says Ken Warner, a public health expert at the University of Michigan, Ann Arbor, and president of the

Society for Research on Nicotine and Tobacco. He concedes that the tobacco industry was guilty of misconduct in the past but worries about restricting research. "How do you avoid infringing on academic freedom, and what sort of slippery slope do



Burning issue. University of Nebraska's Stephen Rennard says bans on tobacco industry funding violate academic freedom.

you create by denying grants on moral grounds?" he asks. "There is a real need for reduced-harm research. The question is, given their history, do we let the tobacco companies fund it?"

Moral dilemma

Duke University's Rose thinks the tobacco industry's new focus on harm reduction may usher in a healthier era of tobacco-sponsored research. This research is "high quality, innovative, and unique," he says, and "very different from the abuses of the past." He adds, "None of the companies that fund our studies have made any attempt to bias our work."

Rose, a co-inventor of the nicotine patch, argues that vilifying the industry won't help the millions of smokers who are trying to quit. "The real enemy is the death and disease smokers suffer," he says. "If we can use tobacco money to help people lead healthier lives, why shouldn't we?"

Stephen Rennard, a pulmonary physi-

cian at the University of Nebraska Medical Center in Omaha who also receives tobacco industry support, agrees. "I approach this from a public health perspective," he says. "People are going to continue to smoke, and we need to make them as safe as we can. The tobacco industry needs university research to develop a safer product."

One of Rennard's projects, funded by RJ Reynolds, evaluated Eclipse—a standard-looking cigarette manufactured by the company that heats rather than burns tobacco, theoretically producing less harmful smoke. Rennard later used Philip Morris money to determine how much smoke the average cigarette user is exposed to. The findings may help the company design a cigarette that reduces the levels of inhaled smoke.

Still, Rennard says that taking industry money required a lot of soul searching. "But in the end I realized that this research *should* be funded by tobacco companies. NIH resources should not be used to improve cigarettes. It would be like the government subsidizing the development of a better laundry detergent."

"It's trendy to beat up on the tobacco industry," Rennard adds. "It's simplistic, and it doesn't help the people who need to be helped. If we delay this research because of concerns about tobacco funding, it could be years before these potentially life-saving products make it to market. That would be the real tragedy."

Smoky past

Others think academic researchers should just say no to tobacco money. Simon Chapman, editor of the journal *Tobacco Control* and a professor of public health at the University of Sydney in Australia, says that despite their new efforts to support harm reduction studies, the tobacco companies have little interest in public health. "They fund this research to buy respectability and ward off litigation," he says. Some worry that reduced-harm products are just a ploy to keep smokers addicted. Chapman says that scientists need only look at current examples of tobacco company malfeasance—from targeting youth smokers in Myanmar to using athletes to promote cigarettes in China—to see that the companies haven't changed their ways.

For many critics of mixing tobacco money with university research, the industry's history speaks for itself. For example, as the link between smoking and disease

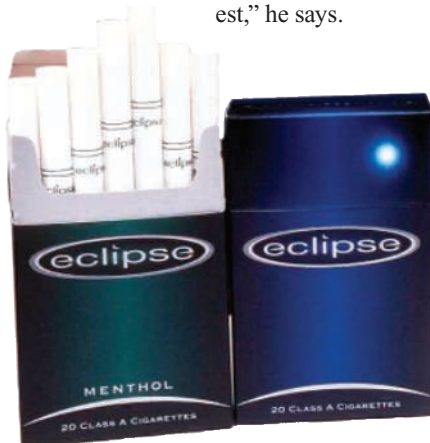
became clearer in the early 1950's, the world's largest tobacco companies established the Tobacco Industry Research Committee (TIRC)—later the Council for Tobacco Research (CTR)—to fund research into the health effects of smoking. But its main goal, internal company documents now reveal, was to obfuscate risks, and few of the studies it funded addressed the hazards of cigarettes (*Science*, 26 April 1996, p. 488).

"During the four decades they operated, TIRC and CTR never came to the conclusion that smoking causes cancer," says Michael Cummings, the director of the Tobacco Control Program at the Roswell Park Cancer Institute in Buffalo, New York. "These organizations were more about public relations than science." The industry agreed to shut down CTR in 1998 as part of an agreement—known as the Masters Settlement—that also awarded 46 U.S. states \$206 billion in compensation for the cost of treating smoking-related illnesses.

But CTR wasn't the only problem. Government prosecutors have charged that the companies frequently killed their own research when it came to unfavorable conclusions, funded biased studies designed to undermine reports critical of smoking, and used the names of respected scientists and institutions to bolster their public image. The industry also lost credibility with its previous attempts at harm reduction when it touted low-tar and filtered cigarettes introduced in the 1950's and '60's as "safer," says Chapman, while suppressing evidence that smokers drew harder on these cigarettes, thereby *increasing* their uptake of carcinogens. These charges are being revisited in an ongoing federal racketeering case—the largest civil lawsuit in American history—alleging a 50-year conspiracy by the tobacco industry to mislead the public about the dangers of smoking. For its part, the industry argues that it has reformed; Philip Morris spokesperson Bill Phelps says his company believes that investing in research is the best way to address the health risks associated with smoking.

Richard Hurt, the director of the Nicotine Dependence Center at the Mayo Clinic in Rochester, Minnesota, says researchers considering industry money should remember the toll extracted by tobacco use—4.9 million deaths per year worldwide, accord-

ing to World Health Organization estimates. "For anyone interested in public health, taking this money is a clear conflict of interest," he says.



Harm reducer? RJ Reynold's Eclipse heats rather than burns tobacco, theoretically producing less harmful smoke.

bacco industry grants. In addition, organizations such as Cancer Research U.K. and the Wellcome Trust will no longer fund researchers who take tobacco money. The American Cancer Society, one of the largest private funders of cancer research, plans to adopt a similar policy this month.

Ohio State University, Columbus, found itself in the eye of the storm in 2003 when Philip Morris offered a medical school

Academic freedom

While scientists debate the merits of taking tobacco money, other authorities may take the decision out of their hands. Over the past decade, a number of institutions—including the Harvard School of Public Health and the University of Glasgow—have prohibited their researchers from applying for to-

tobacco money, the school could not accept both. "There was a very heated debate among the faculty," says Tom Rosol, the university's senior associate vice president for research, who ultimately made the decision to take the Philip Morris grant. "It came down to the issue of academic freedom," he says. "We didn't want to accept a grant that would have placed restrictions on our investigators." Rosol's decision sparked a backlash, and several departments, including the Comprehensive Cancer Center and the School of Public Health, enacted tobacco funding bans, barring researchers from taking tobacco money in the future.

A resolution approved by the University of California's (UC) Academic Senate this summer would have the opposite effect. Stating that "no special encumbrances should be placed on a faculty member's ability to solicit or accept awards based on the source of funds," the proposal would forbid any institutions within the UC system from banning tobacco funding. In a letter endorsing the resolution, UC president Robert Dynes describes such bans as "a violation of the faculty's academic freedom."

Not everyone buys the academic freedom argument. "The university should be a role model," says Joanna Cohen, an expert on university tobacco policies at the University of Toronto. "Academic freedom should not override its ethical responsibilities."

Nor does the American Legacy Foundation, a Washington, D.C., tobacco education and funding organization established by the Masters Settlement, have any qualms about denying grants to institutions that take tobacco money. "We don't see this as an academic freedom issue," says Ellen Vargyas, the foundation's general council. "The tobacco industry has a bad history, and this is our way of encouraging institutions not to take their money."

The University of Nebraska's Rennard, who made himself ineligible for state money by accepting tobacco industry funds, finds these policies and the university bans deeply flawed. "Political positions should not determine scientific agendas," he says. "If we restrict research on moral grounds, should we ban grant money from pharmaceutical companies or industries that pollute the environment? Where do you draw the line?"

As public funding gets tighter, more universities may find themselves confronting this question. The tobacco industry is poised to fill the financial void, but continued charges of company malfeasance will increase the pressure on schools to shun this money. At the end of the day, institutions will have to decide whether to overlook the source of this funding, or take the moral high road and watch it go up in smoke.

—DAVID GRIMM



No sale. University of Sydney's Simon Chapman says the tobacco industry wants to buy researchers' credibility.

researcher a \$590,000 grant at the same time a state foundation offered a nursing school researcher a \$540,000 grant. Because the terms of the state grant would have prohibited all other university researchers from taking