

# John 'J.J.' Cohen

Not satisfied with just his pioneering research in programmed cell death, immunologist John 'J.J.' Cohen has spent years sharing his fascination with science with the lucky citizens of Denver, Colorado.

At the Wynkoop Brewing Company in downtown Denver, the third Tuesday of every month is a sight to behold. College students, octogenarians, bankers and science-fiction enthusiasts gather in the pub's cozy back room. Some nights, the mayor of Denver and co-owner of the pub, John Hickenlooper, quietly slips in behind the standing room-only crowd.

The group, often numbering nearly 200, listens intently to the speaker, a different one each month. The topic changes too, but at this pub's 'Café Scientifique', it's always something about science.

The café is the creation of John 'J.J.' Cohen, who began it in November 2003, inspired by similar ventures in the UK (*Nature* 429, 333; 2004). In its first few tries, the evening drew about 60 people but it has since gone on to become one of the most well attended in the world.

"That's a real achievement to get a heterogeneous audience like that to come and hear other ideas," says Chuck Kirkpatrick, professor of medicine at the nearby University of Colorado and regular café attendee.

On this chilly night in December, the scheduled speaker is the president of the Mars Society, an advocacy group for Mars exploration. "I first became aware of these folks in 2001 while flying over the Canadian Arctic," Cohen says, introducing the speaker. "Our pilot pointed out this structure and said, 'There are a whole bunch of loonies down there practicing being on Mars.'" Cohen's crisp Canadian accent takes a dramatic pause. "I never thought I'd be introducing the chief looney."

Cohen's style may be irreverent, but it is effective. By the end of the evening, a clear plastic 'collection' bucket adorned with a biohazard sticker is full of bills totaling more than \$200. The money will be used to pay for future speakers' dinners.

The café is a perfect fit for Cohen, known for his intense curiosity and delight in the world. But running it is just his pet project. In the daytime, he doubles as an immunologist at the University of Colorado.

Cohen championed ideas about apoptosis, or programmed cell death, long before his colleagues recognized it as a biological phenomenon, and made fundamental discoveries about its role in immunity. His group showed, for instance, that steroids induce apoptosis by turning on the expression of certain genes, and that blocking RNA or protein synthesis can prevent cell death.

"So not only is it programmed cell death, but cell death has a program. That was startling and is still, to me, the most interesting thing I've ever done," says Cohen. In the following years, his work suggested that apoptosis might be involved in various immune processes, including the killer instinct of cytotoxic T lymphocytes. Others in the field strongly opposed the theory but eventually accepted it after examining Cohen's data.

"He was one of the pioneers leading the field when there were only 10 apoptosis papers published a year," notes John Cidlowski, chief of the laboratory of signal transduction at the US National Institute of Environmental Health Sciences. Cidlowski and Cohen organized the first Keystone Symposium on apoptosis in 1995. When the field exploded soon after, however, Cohen's small group struggled to compete. Apoptosis papers are now published at a rate of at least two per hour, or more than 300 each week.

"I guess we went around making it sound too interesting," says Cohen. "We were always trying to be clever. Now it's about crossing t's and dotting i's, which I find a lot less interesting."

Cohen showed an early interest in science, holding job as a lab technician at age 11—illegal by today's laws, he notes. By age 28, he had earned first a Ph.D., then an M.D. from McGill University in his hometown of Montreal, Canada. He then arrived at the University of Colorado as a postdoc and stayed on for the next 30 years doing research and teaching immunology to medical students.

As his own lab's discoveries have slowed, Cohen has in some ways passed the torch on to his daughter Zoe, who calls him a "gray-haired 12-year-old." A postdoctoral fellow at the University of Arizona in Tucson, she studies the potential role of apoptosis in stroke and began her brush with science at age 10, washing bottles in Cohen's lab. "To experience science in a non-threatening and fun way really encouraged me," she says.

Peg Squier, a former graduate student and postdoc in the lab, also recalls a fun working environment with Cohen's guffaws and gentle pranks. He once made a batch of pencils marked 'Theoretical Immunology Dept.' for a student who had forsaken the bench. "He sees everyone as a peer, just a differently experienced peer," says Squier. It's this respect for others, as well as his desire to make science accessible, that make his outreach efforts wildly successful.

The café isn't Cohen's only foray into science education.

"It is a little way of paying back the people who pick up the tab indirectly. It lets them understand what we do here at the university."



Helen Macfarlane

In 1989, he invented the Mini Medical School, a nine-week free course that mimics the material covered in the first two years of medical school. Cohen says he expected to attract perhaps 20 people—"like a bird-watching class"—the first year. But after an article appeared in the local newspaper, nearly 1,200 people tried to register. Cohen scrambled to book the largest auditorium on campus, which accommodates roughly 400.

The course attracts both young people considering a career in medicine and retirees seeking better communication with their doctors. Cohen ropes in real medical students to help run the course and answer questions. In October, he even had four students sign up to help the night before their second-year immunology exam.

"No one but J.J. could get medical students to help out the day before their midterm," says Bridget Coughlin, the human health curator at the Denver Museum of Nature and Science, which now holds the course in its plush IMAX theater. "He is incredibly earnest and that genuineness is like a black hole that pulls people in."

The Denver course has had a waiting list for the course all of its 17 years and the model has been replicated at 80 sites around the world.

Among Cohen's other projects is a book about the science behind the Black Death epidemic during the Middle Ages, indoor rowing sprints and an art exhibit and competition inspired by scientific research images.

Although beyond the official age of retirement, Cohen also still runs a productive lab. But it is his public outreach efforts that give him the greatest pleasure. "It is a little way of paying back the people who pick up the tab indirectly," he says. "It lets them understand what we do here at the university."

Kendall Powell, Denver