

COMMUNITY CONNECTION

Studies on hepatitis C led to a cure, and a Lasker Award, for a Rockefeller scientist

Dr. Rice's research on the hepatitis C virus resulted in the development of therapies that have saved millions of lives. Last fall he won America's most prestigious scientific prize.

Before Charles M. Rice turned his attention to hepatitis C—a virus that infects millions worldwide and can cause liver failure or cancer—the available treatments for the disease were causing side effects so severe that many patients couldn't tolerate them. Today, there are several drugs for the disease that are both effective and safe, and they wouldn't exist were it not for Dr. Rice's breakthroughs.

Last fall, Dr. Rice was honored with one of the scientific community's most coveted prizes, considered second only to the Nobel in prestige: the Lasker Prize, known more formally as the Lasker-DeBakey Clinical Medical Research Award.

When Dr. Rice first began working on HCV, in 1989, it seemed like a straightforward project. He and his colleagues set out to culture the virus in cells in the lab, an essential step toward studying viruses and developing treatments. But when they tried to coax HCV to replicate, it didn't work—and over the next three decades, Dr. Rice and his team relentlessly pursued a solution, first by successfully creating a version of the virus that replicated in the liver, like natural HCV, and then later by developing an HCV replicon. First reported on by Ralf Bartenschlager and Volker Lohmann, a replicon is an edited version of the virus's genome that can replicate and produce HCV proteins in the lab, just like the real thing.

When the last piece of the HCV puzzle was finally solved, the researchers had achieved a crucial breakthrough: a system that could, for the first time, allow every step in the HCV life cycle to be studied.



Photo: John Abbott

"The story of hepatitis C is really about persistence," says Dr. Rice, who is the Maurice R. and Corinne P. Greenberg Professor in Virology and head of the Laboratory of Virology and Infectious Disease. "We had to continue believing that success was possible, and continue trying different approaches, even when we repeatedly encountered failure."

The system he and his colleagues created was seized upon by companies working on treatments for hepatitis C, and led to the development of three new classes of drugs, each of which effectively blocks HCV replication in cells and in people. Clinical studies have shown that combinations of these drugs can cure the disease in nearly every patient they are administered to—with minimal side effects.

"Charlie's remarkable contribution to the cure of hepatitis C is an embodiment of our mission, science for the benefit of humanity," says Richard P. Lifton, the university's president. "The cure of the hepatitis C virus is an extraordinary advance, destined to save millions of lives."

Dr. Rice is the 22nd Rockefeller scientist to have received a Lasker Award in the university's 116-year history.

Rockefeller repairs FDR Drive drainage pipes

This past winter, a marine engineer who was working on Rockefeller's campus expansion project noticed a problem: the drainage infrastructure underneath the East River Esplanade was crumbling. Pipes in six of the seven outfalls between East 63rd and East 68th Streets, which drain rainwater from the FDR Drive, the Esplanade, and eventually from Rockefeller's new campus, were either broken, disintegrated, or completely missing.

Although maintaining the outfalls is the city's responsibility, the engineers determined that the best course of action—to minimize disruption to the community and ensure

proper drainage along this stretch of the river—was simply to fix them. After consulting with the city, the university agreed to make repairs at its own expense, and established an aggressive schedule to complete the work by early spring.

The repair project, which took place concurrently with construction on the new Rockefeller campus expansion, required the Esplanade to be closed so that work could occur just inside the seawall.

"We wanted to complete the repairs quickly, both so that the Esplanade could reopen before the weather warmed up, and in order to minimize the impact on the River Campus construction schedule," says George Candler, the university's associate vice president of planning and construction.



Photo: Zach Veilleux

The Stavros Niarchos Foundation—David Rockefeller River Campus, being built over the FDR Drive, will add two acres and 136,000 square feet of lab space to Rockefeller's campus. As part of the project, the university will refurbish the adjacent public Esplanade by summer 2018.



SCIENCE FOR THE BENEFIT OF HUMANITY

1230 York Avenue
New York, NY 10065

The Rockefeller University is the world's leading biomedical research university, devoted to making transformative discoveries in bioscience and improving medicine for the benefit of humanity.

www.rockefeller.edu

COMMUNITY CONNECTION

Clinical Trials

The Rockefeller University Hospital, a unique facility devoted exclusively to clinical research, is recruiting volunteers to participate in several innovative trials.

Childhood cancer survivors

Are you an adult survivor of childhood cancer? Rockefeller is looking for a link between fat exposed to cancer treatment and metabolic conditions like diabetes.

Learn more at go.rockefeller.edu/cancersurvivor.

More than 100 other clinical studies are currently underway at Rockefeller. Explore them at www.rucares.org or call 1-800-RUCARES.

Immune response to Zika

Have you ever been diagnosed with Zika? Researchers at Rockefeller are studying the immune response to the Zika virus to help advance vaccine development.

Learn more at go.rockefeller.edu/zikavaccine.

Upcoming Event



The Peggy Rockefeller Concerts: 2017–2018 Season

The next season of outstanding musical performances by internationally acclaimed artists begins September 12 at Rockefeller. Tickets and more information at peggy.rockefeller.edu.