



CAR T-cell therapy involves genetically engineering a patient's own T cells to attack cancer cells.

NEW AWARD HONOURS CAR T PIONEERS

THE NEW BROERMANN MEDICAL INNOVATION AWARD honours translational research with proven or high potential to transform patient care worldwide.

“Silly, useless, and a waste of time” were just some of the dismissive remarks from the medical community directed at immunologist-oncologist, Carl June, of the University of Pennsylvania, in Philadelphia, and genetic engineer-cell therapist, Michel Sadelain of Columbia University in New York, as they pursued early efforts to develop personalized cancer immunotherapy. Three decades later, the CAR T-cell therapies they independently pioneered have saved countless lives by genetically engineering patients' own immune T-cells to target and destroy cancer cells.

June and Sadelain have been named as recipients of the inaugural Broermann Medical Innovation Award. The €1 million prize will be awarded annually to researchers who demonstrate exceptional excellence and whose work advances medical science and improves patient care by addressing critical healthcare challenges.

“This award is a tribute to the entire collaboration and the many patients, and stands as a huge recognition of the field,” says June. “It is humbling, exhilarating and brings pride and joy to everyone involved,” adds Sadelain.

Established in 2024 by lawyer and auditor Bernard große Broermann — who sadly passed away that year and was also the founder of the Asklepios Clinics Group, one of Germany's largest private clinical operators — the award honours große Broermann's lifelong mission: to transform patient care. Unlike many major science prizes that focus on purely fundamental research, the Broermann Medical Innovation Award recognizes discoveries with potential for real-world benefit.

“It was absolutely vital for him to support initiatives that have an impact on what he

saw in clinics every day,” says Corinna Larsen, the director of operations for the award, based at the University Hospital Gießen and Marburg in Gießen, Germany. “He always focused on what truly benefits patients.”

A LEGACY OF CARE AND INNOVATION

Growing up in the 1940s on a farm, in Damme, Germany, große Broermann developed a curiosity for science and a sense of entrepreneurship. He studied medicine and chemistry at the Free University of Berlin, but then switched to law and business, aiming to create a company that could help people

beyond what he could achieve as a medical doctor. In 1985, he established the Asklepios Clinics Group, headquartered in Hamburg, Germany, comprising more than 160 private healthcare facilities nationwide.

For much of his life, große Broermann was passionate about medical innovations that tackle the cause of diseases rather than just alleviating symptoms — a philosophy that the newly established Broermann Award now seeks to continue. Winners are chosen based on the real-world medical advancements their work has already achieved or is highly likely to deliver.

“We welcome research that affects millions of people, but we are also interested in rare diseases that are often neglected because they affect only a small number of patients,” says Larsen.

The award organizers expect that the €1 million prize will entice young scientists worldwide to engage in innovative medical research projects. “In medicine, it is difficult to find time for research, because of the ongoing responsibility for patients,” says Larsen.

CELEBRATING CAR T

Ensuring the award's global reach has also been crucial, adds Larsen. Prior to its launch, the organizers sought nominations from thousands of universities worldwide, eventually whittling them down to 37 contenders. The selection committee ultimately chose to honour June and Sadelain for developing a treatment that has led to long-lasting remission in some patients with leukaemia, lymphoma and myeloma. “Here we have very basic foundational research that made an impact not just on one disease, but several,” says Larsen. “Importantly, this foundational research was further pursued



▲ Michel Sadelain engineered the CARs that revolutionized cancer immunotherapy (left). Carl June developed the first FDA-approved CAR T-cell cancer immunotherapy (right).

by the awardees until it reached application in patients, demonstrating an exemplary path from basic science to clinical implementation.”

The immunotherapy works by adding synthetic receptors (known as chimeric antigen receptors, or CARs) to a patient's own T-cells, enabling them to recognize and attack cancer cells. Sadelain coined the term ‘chimeric’ because the receptors are engineered by combining parts of different natural molecules — a breakthrough that also introduced significant technical challenges.

“We didn't know whether these ‘Frankensteins’ would survive or be rejected by the body,” recalls June. Sadelain's trick was to target the CD19 protein, found on both healthy B-cells and certain cancerous cells in blood cancers. That meant the therapy would not only destroy the targeted cancer cells, but also knock down the B-cell immune response, lowering the chance that the body would reject the therapeutic CAR T-cells.

Published in 2003, Sadelain's group reported the first successful tests in mice bearing CD19-expressing tumours.¹ Both Sadelain and June's teams wanted to move to clinical trials

with humans, but both struggled to secure funding, in the wake of the 2008 financial crash. “People thought there was absolutely no way this will be embraced by industry — even if the trials worked — because no companies had ever developed cells as medicine,” says Sadelain. “I had to fire one-third of my staff and came close to shutting up shop,” adds June.

With only shoestring budgets, around 15 years ago, June's therapy was tested on three patients with chronic lymphocytic leukaemia, and Sadelain's on five patients with acute lymphoblastic leukaemia, while a National Cancer Institute team treated a patient with lymphoma. The results were astonishing across the board.^{2,3} “The patients went from having pounds of cancer to not a single cell, in a month,” June says, of his team's trial.

Both winners are working on new avenues for CAR T-cell therapies, as are others around the world. Early results in treating autoimmune diseases look extremely promising, says Sadelain. “Some people are calling this a ‘second tsunami’ of CD19 CAR T-cells results, so I couldn't be happier.”

June intends to use his prize money to establish a fund for

training international exchange students. Sadelain has not yet settled on a plan, but says he will start with a “big party” to thank all his collaborators, who stuck with the project, some over decades. “It's important for young scientists to understand that the Broermann Awards are watching and supporting such journeys,” says Sadelain. “These are long and risky paths, but also very exciting and so incredibly rewarding.” ■

REFERENCES

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