RESEARCHERS IN CANCER WARS
THE BATTLE AGAINST CANCER DEPENDS ON SCIENCE
QUAN ZHOU & MECUSA
JUDITH AGUDO (BARCELONA) always liked science, her first inspiration was "ERASE UNA VEZ" an European science cartoon show.

IN HIGH SCHOOL, SHE ATTENDED A COURSE AT THE UB*. In order to be a successful scientist in Spain, you have to study in the USA.

*University of Barcelona

NOWADAYS, JUDITH IS A PROFESSOR IN THE DEPARTMENT OF CANCER IMMUNOLOGY AT THE DANA FARBER INSTITUTE, AND SHE IS AFFILIATED TO IMMUNOLOGY AT HARVARD MEDICAL SCHOOL, IN BOSTON.

Judith developed the Jedi mouse (just EGFP death inducino).

Genetically modified tumor cells producing a green fluorescent protein (GFP) are injected into these mice.

I study breast cancer immunotherapy, i.e. how to use our body’s defenses to kill cancer. If a patient’s defenses are well trained, they could replace chemotherapy.

The Jedi mouse’s defenses (lymphocytes) are trained to kill these green cells.

Thanks to the Jedi system, treatment-resistant tumor cells can be easily identified (battle survivor cells).

My dream is to be able to cure cancer, not just make it go into remission.

AND ISOLATED TO STUDY THEIR SPECIAL PROPERTIES.

Judith Agudo & Jedi
Although Pilar - born in Leon - always liked clinical degrees, she studied biology. While doing her PhD in biomedical engineering in Salamanca (Western Spain), she noticed she liked particular areas of medicine, but...

I can't work on what I like in Spain :(. I'll have to move abroad.

But after working in labs she realized how much she enjoyed research.

After applying for several positions she decided to take one in St. Louis.

I worked in cutting-edge projects there.

She's currently a professor in South Dakota University at Sanford Research, and runs her own lab in the Department of Cancer Biology and Immunotherapies.

We do research on the cancer environment. Cancer is not just the tumor itself, but also what surrounds it and what it feeds on to grow.

In her lab they can mimic a patient's cancer (tumor + environment) with the patient's own cancer cells. This way, they can study the disease in a personalized way, since each cancer is different and unique.

This allows testing different therapies in the lab, to determine their efficacy before using them in patients.

I am really proud of this ground-breaking model, which could be used in the future to predict how each individual patient responds to their own therapy.

This is such a pioneering method that is still undergoing pre-clinical trials.

Pilar De la Puente...
Lucia Regales, from Gijon (Northern Spain), grew up surrounded by nature. Her love for nature drove her to study biology.

After seeing many of her family members suffer from cancer, Lucia decided she would study genetic diseases.

Her passion for science took Lucia to different countries, all the way to the USA, where she could do what she really liked.

After a few years in academia in the USA, she decided to jump into industry.

Nowadays, she is the Scientific Director of Oncology in the biotech company Curis.

She develops drugs that help the body's defenses break down tumor cells' barriers, making them vulnerable to be attacked.

Learning about immunotherapy and witnessing how patients can benefit from it motivates me every day.
It is important to remember that patients suffer from cancer, but they are not responsible for “fighting” the disease. The real battle depends on science, and we have great fighters on our side.

Aiming to “End cancer” as if it was “one” disease is not possible. We need to perform very specific studies for each type of cancer, because every tumor is different.

We have to develop new genetic and cell engineering tools to manipulate the immune system.

Precision medicine is the future of healthcare. It is currently at an early development stage, but the goal for the future is to be able to analyze a patient’s tumor and determine which particular therapy will work for them.

May science be with you!