



Making a difference one researcher at a time

An awardee who represents the creativity and leadership valued by the foundation is Cédric Blanpain, professor at the Université Libre de Bruxelles, Belgium, and WELBIO (Walloon Excellence in Lifesciences and Biotechnology) investigator. Blanpain was the 2012 recipient of the Liliane Bettencourt Prize for Life Sciences for his discoveries in stem cell and cancer cell biology, which were made using novel methods developed by his lab. On the impact of winning the prize on his research, Blanpain says, "Of course I was very happy to get this award. It increases your visibility and helps you recruit better employees."

Blanpain's group discovered that killing a minor population of cancer stem cells via lineage ablation can lead to tumor regression.



Cédric Blanpain

Describing this technique, he says, "The way we use lineage ablation—there are many different ways—is to express the receptor of an important toxin in the cancer stem cell population. If you don't express its receptor, the toxin is inert. But when the receptor is present and we inject the toxin, we wipe out the population of cancer stem cells carrying the receptor, and the tumor shrinks." His group also identified a population of tumor stem cells, with characteristics of both mesenchymal and epithelial cells, that can give rise to metastasis.

In describing his research approach, Blanpain says, "My scientific background has been influenced by my medical background, so much of my research has some kind of health-related objective. What I try to do in my lab is to use model systems to observe new paradigms in cancer cell and stem cell biology. We then use all the possible technologies offered to us—transcriptome assays, chromatin epigenetic characterization, and others—to understand the underlying molecular mechanisms. Finally, we attempt to apply what we have learned from this basic model to improving human health and adding to medical knowledge."

Awards are long-term investments for the foundation. "I know that former awardees may ask for additional support if they have new original and breakthrough projects" says Blanpain.

Heard echoes this sentiment. "They take great care of the people they connect with," she says. "Overall, it is a very interesting model for how to keep investing in the most promising research, and to get a feeling of what is needed in specific areas. It's also an example of how a foundation can really help science work, and hopefully it will lead to others adopting the model."



Edith Heard

In addition to these prizes, the foundation evaluates a continuous stream of requests and makes numerous grants in support of life sciences research. One example is an M.D./Ph.D. program established in France 15 years ago by the foundation in partnership with Inserm; this year, the program will include funding to allow assistant professors in medicine with a

Ph.D. to have some protected time for research, away from hospital duties. Other examples include helping establish the Imagine Institute, the Brain and Spine Institute (ICM), and the Center for Interdisciplinary Research (CRI) in France; funding a system to digitize lectures at the Collège de France and make the videos publicly available; and promoting science education for high school students and the general public.

"The foundation listens to what are the emerging themes and areas that should be better explored, and that is very special—to have a foundation that is right there with the scientists, putting their finger on the pulse of what's important to do," says Edith Heard, professor at the Collège de France and unit director at the Institut Curie, in Paris; future director general of the European Molecular Biology Laboratory (EMBL) starting in January 2019; and member of the foundation's scientific advisory board. "They are unique because they have flexibility in terms of funding that one doesn't find elsewhere. The foundation is extremely professional in the way they do this and yet you feel part of a family, that you can connect with them."

As part of its humanitarian mission to promote an inclusive society, the foundation funds innovators who are working to create opportunities for people with disabilities, such as autism and hearing loss, or who are homeless or mentally ill. In 2016, the foundation established the Fondation Pour l'Audition, which supports research, treatment, and prevention of hearing loss with the goal of giving people with hearing issues equal access to educational, professional, and social opportunities. "They really care about helping society," says Heard. "That is something that comes across quite strongly in all of the actions I see coming out of the foundation."