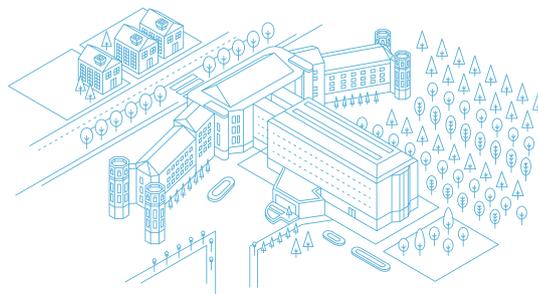


CNIO FRIENDS

newsletter

Latest news from the Spanish National Cancer Research Centre



COLUMN

A common place for science and art

Never before have we been in possession of so much knowledge or been so aware that one day we will be able to understand life and the universe in detail. The power of art is also transformational, albeit in a different way. The thoughts and emotions generated by art and by other human feats are propagated like sparks by other minds, bringing changes and new ideas. This chain reaction stimulated by discovery and creation is what makes the present better than the past, in so many ways.

Scientists and artists share creativity, liberty, reflection and curiosity. At the CNIO, where these ingredients combine to give rise to the best science, we want to create the right conditions for art to be generated as well. On 7th February, we presented *Binomio: a dialogue between art and science* project at our Centre, in which the visual artist Eva Lootz and the researcher Margarita Salas have established a bond, the result of which is a collection of 59 drawings and one audiovisual piece. Furthermore, on the 23rd, we presented this collection at the Madrid International Contemporary Art Fair (ARCO). The drawings and the audiovisual piece can be seen at the CNIO until 6th April. Opening times can be found on the project website <https://binomio.cnio.es/>. Profits from ticket sales will be donated to cancer research through the *CNIO Friends* initiative.

—MARIA A. BLASCO
Director



CNIO SCIENCE NEWS

A paper published in *Cell Reports* demonstrates the key role of the RPAP1 protein – whose function in mammals was unknown up until now– in establishing and preserving cell identity through the regulation of RNA polymerase II, an essential enzyme involved, among other processes, in the transition of cells from undifferentiated states to specialised cells (1). *Cancer Cell* has published a paper by researchers from the Experimental Oncology Group that shows how the elimination of the c-Raf kinase causes the regression of Kras oncogene-driven advanced lung tumours in mice. It has also been shown that the elimination of the c-Raf protein produces low toxicity (2). The Telomere and Telomerase Group has shown the therapeutic effect of a gene therapy that lengthens the telomeres in a pulmonary fibrosis mouse model. Their work

constitutes a proof of concept that telomerase activation represents an effective treatment against pulmonary fibrosis associated to short telomeres. The paper appeared in the journal *eLife* (3). The Experimental Oncology Group has indentified the Saa3 gene as one of the genes responsible for the property that fosters tumour growth in cancer-associated fibroblasts, a subpopulation of cells associated with inflammation in pancreatic cancer. The paper was published in *Proceedings of the National Academy of Sciences (PNAS)* (4). The Epithelial Carcinogenesis Group has discovered an unexpected link between inflammation and cancer in the pancreas. One of the genes that increases the risk of developing pancreatic cancer also controls inflammation. This finding offers a major conceptual change. The paper appeared in *Nature* magazine (5).

OUR CENTRE

We have begun the year with a great piece of news. The *CNIO Friends* initiative now has 1,000 members. Over the past three years, we have received the support of over a thousand associations, businesses and people who have often gone further than providing personal support and have extended their generosity. For example, the ROSAE Association, for women who have suffered from breast cancer, decided to support our initiative and received us with open arms at their sisterhood lunch held in Valdepeñas. Also, teachers from the Mare Nostrum school in Cartagena, to mark International Childhood Cancer Day, dressed up as characters from Star Wars and had their photos taken with children suffering from this disease. The aim of this was three-fold: to raise the visibility of the disease, to entertain the little ones, and to raise money for cancer research.



ROSAE Association's sisterhood lunch in Valdepeñas.

We must also celebrate the fact that the project coordinated by Óscar Llorca, director of the Structural Biology Programme, has received funding from the Human Frontiers Science Program. The aim is to gain a precise and detailed understanding of how remodelling chromatin complexes work, since they play a key role in regulating gene expression and, therefore, diseases like cancer.



«The artist and scientist must have curiosity, imagination and passion for what they do»

Binomio: a dialogue between art and science is a pioneering initiative in Spain, which brings together first-rate scientists and artists to stimulate the exchange of ideas between two different but equally necessary worlds when it comes to understanding reality. The protagonists of this first edition – and of this interview – are Margarita Salas, a molecular biology pioneer, and Eva Lootz, visual artist.

Margarita Salas
Researcher
Eva Lootz
Visual artist



Why did you decide to embark on a project like Binomio?

M.S. When Maria Blasco came to me with a proposal to create a dialogue between art and science, I immediately agreed to take part in the project. For me, science is a great passion, but I am also a lover of art. The result of this dialogue was unknown, but it was worth trying it out. I was lucky enough to share *Binomio* with the outstanding artist Eva Lootz, who I spoke to on several occasions about my work. From these conversations, Eva created a series of stunning drawings. I think the result has been excellent and should encourage this experience to be repeated.

What has the creative experience of Pairing been like?

E.L. For me, it's been a beautiful and thrilling experience. It has put me in contact with a new area of knowledge for me, since although I had previously taken an interest in physical phenomena, I had never ventured into the world of microbiology. And as I'm the kind of person who likes to learn, finding out about this cutting-edge field of research, which is so essential for the present and future, has opened up new perspectives and has been so thoroughly stimulating.

What do Art and Science have in common?

M.S. I think the thing that Art and Science have in common is that they are

both creative processes. Both require a process of reflection and the search for a beautiful outcome in the case of Art, and an important outcome in the case of Science. The artist and scientist must have curiosity and imagination, and one characteristic of both is a passion for what they do. As Max Delbrück, who was the father of Molecular Genetics in the 1950s, said: "If you don't have the qualities to be an artist, the best thing you can do in life is to be a scientist". E.L. I would say that they both ask questions about the world in which we live. They try to penetrate that enigmatic phenomenon we call reality. Science operates with a precise and defined methodology, tackling chunks of reality that have been previously parcelled up and defined. Art uses varying procedures depending on the time and place. Art is heir to an ancient legacy of study and refinement of the sensory faculties and it is a land of infinite potentiality. The opposition between art and science is relatively new, having been carved out gradually since the Renaissance, and reaching its zenith in the late 18th Century with the founding of Academies, becoming dominant over the course of the 19th Century. Today, to my way of thinking, and summarising tremendously, it is a somewhat anachronistic remnant of a mechanistic world vision.

PROFILE

INVITED SEMINARS



Elisa Martín Garijo
Chief Technology Officer for IBM Spain

The life philosophy of Elisa Martín Garijo could be expressed as the perfect combination between living in the moment, living with uncertainty, and always having milestones to achieve that allow us to attain our life goals. "The most important thing we have is what we have at this current moment", she said a few days ago during her talk organised by the CNIO's Office for Women in Science (WISE). Thanks to these premises, which can only be balanced with skill and wisdom, qualities she conveyed to the audience at her talk, Martín

Garijo rose to the position of director of IBM's Department of Technology and Innovation in Spain. From there, she has promoted policies of equality and educational initiatives, and sought to change the Technology sector, traditionally so hostile for women, in which IBM is an oasis thanks in part to people like her. "We have to mobilise in order to change the rest of the ecosystem because, otherwise, it will destroy us". And there is still much to do. Nowadays, she lamented, "we are not able to find girls at universities who want to go into the field of technology, one of the sectors that offers the best salaries". The figures show fewer than 26% of women in engineering. "It's a shame –she added– because half of the talent we have in society does not hold positions with good salaries, positions of responsibility that have the capacity to influence in society". Martín Garijo works to close this gap in all areas of her life, and in spite of everything, she is "enthusiastic about the future". Quite an example and a model for others.

DISTINGUISHED SEMINARS

- 19 JANUARY**
ANTONI CASTELLS
Hospital Clinic of Barcelona (Spain)
- 26 JANUARY**
ANDRÉS AGUILERA
CABIMER (Spain)
- 2 FEBRUARY**
RAÚL MÉNDEZ
Institute for Research in Biomedicine (IRB Barcelona) (Spain)
- 16 FEBRUARY**
JÖRG HOHEISEL
DKFZ (Germany)
- 23 FEBRUARY**
JOHN RUBINSTEIN
The Hospital for Sick Children Research Institute (Canada)
- 26 FEBRUARY**
SHIRLEY KUTNER.
Hebrew University of Jerusalem (Israel)

WOMEN IN SCIENCE OFFICE SEMINARS

- 30 JANUARY**
LAURA FERRERO CARBALLO
Writer (Spain)
- 20 FEBRUARY**
ELISA MARTÍN GARIJO
Chief Technology Officer for IBM Spain (Spain)

