

# ***Margarita Sala's Life and Work***

# *About her family...*

She was born in Canero (Asturias), Spain, on the 30 of November of 1938 in Asturias.

Her father was José Salas Martínez (1905-1962), a psychiatric doctor who influenced her, encouraging her interest in science, and her mother was Margarita Falgueras Gatell (1913-2014), teacher.

He had two brothers, also scientists: José Salas Figueras (1937-2008) and María Luisa "Marisa" Salas Figueras.



## ***About her and her career...***

At the age of 16, she went to Madrid to make the exam to enter in Medicine and Chemistry studies.

She graduated in Chemistry at the Complutense University of Madrid and obtained a degree in 1961, with a supervisor Alberto Sols (CSIC).

Then, she entered the laboratory of Alberto Sols, a pioneer of biochemistry in Spain. Under direction of him, she completed her doctoral thesis on the anomeric specificity of glucose-6-phosphate isomerase.

She got married in 1963 with Eladio Viñuela, a Chemistry and Biology who studied the virus of peste porcina.

Once she finished, she went to the United States for four years with her husband, to work as a researcher at the New York University with Severo Ochoa. It was one of the best stages of his life from a scientific and cultural point of view.

She died the 7 of November of 2019 in Madrid with 80 years. She died of a cardiorespiratory arrest after a complication from a digestive disease she was going to have surgery for.

## ***Much more than a scientist...***

Along with her work as a researcher, Margarita Salas will be remembered as a great defender of women's rights, as a reference for feminism and, above all, as a model for girls with a scientific vocation.



## ***Scientific activity***

Among his most important scientific contributions, the determination that the reading of the genetic message takes place in the 5 'to 3' direction stands out; demonstration that p6, a histone-like protein, cooperates with the p4 protein in repressing the A2c early promoter and activating the A3 late promoter; demonstration that the UAA nonsense triplet results in termination of the polypeptide chain in an Escherichia coli system; the discovery of a specific glucokinase for glucose phosphorylation in rat liver whose synthesis depends on insulin; and his research on the bacteriophage virus DNA polymerase  $\Phi 29.10$

## ***Work of the Faculty of Chemistry***

From 1968 to 1992 she was a professor of Molecular Genetics at the Faculty of Chemistry of the Complutense University.

In 1977, she began working at the "Severo Ochoa" Molecular Biology Centre as Head of the line "Replication and Transcription of the DNA of the bacteriophage Phi29". The study of this virus had already begun at the end of the sixties and her research revealed that, although it has only 20 genes, it actually hides complex molecular machinery. Based on the basic research, Salas' group showed that very important and innovative applications could be made and that its genetic machinery could open up new possibilities in the field of molecular biology.

# *Accomplishments*

Her intense and long career as a researcher has resulted in the publication of more than 390 scientific papers in prestigious journals, 8 patents and has supervised more than 30 doctoral theses.

She has been awarded numerous prizes:

- King Jaime I Prize for Scientific and Technical Research (1994)
- Santiago Ramón y Cajal National Research Prize (1999)
- Prize for Chemical Excellence by the General Council of the Official Associations of Chemists of Spain (October 2014)
- Madrid+d Prize for the best patent, awarded by the Madrid+d Foundation for Knowledge (2013)

He has also received several medals:

- Medal of the Principality of Asturias (1997),
- Gold Medal of the Community of Madrid (2002),
- Medal of Honour of the International University Menéndez Pelayo (2003)
- Medal of Honour of the Complutense University (2005)
- Gold Medal of Merit for Work (2005)

In 2015 she has been named Asturiana Universal.

## *Last years of life*

Even in her last years she kept winning titles:

2015: Madrid Woman's Week International Award for Women and Science, granted by the Woman's Week Foundation.

2016: Echegaray Medal from the Academy of Exact, Physical and Natural Sciences.

2018: Third Manchaarte Award.

2019: European Inventor Award 2019 in the category Lifetime Achievement et in the category Popular Prize.