



Maria Laura PEDANO

Home Country
Argentina

Degree
Post-Doctorate in
Interdisciplinary
Chemical Sciences

Expertise
Bioengineering

Research Focus
Using Biosensors to
Detect
Chagas' Disease

Host University
Northwestern
University,
United States

Fellowship Awarded
2007

Laura Pedano was born in San Salvador de Jujuy in Jujuy, a small province in the north of Argentina that borders on Chile to the east and Bolivia to the north. She grew up in the bosom of a large family as the eldest of her two sisters and brother.

After high school Laura moved to Córdoba to attend the National University of Córdoba, where she obtained her bachelor's degree in chemical sciences in 2000 and her doctorate in 2006, and where she also worked as a teaching assistant throughout her studies.

Her doctoral thesis won the Enrique Herrero Doucloux Award from the Argentinean Chemical Association for best doctoral thesis in physical chemistry in 2006. She was offered a post-doctoral position at Joseph Fourier University in Grenoble, France in 2007, and she is carrying out post-doctoral research in the United States at Northwestern University in Evanston, Illinois.

Laura's post-doctoral research is focused on developing DNAbased biosensors to detect Chagas' disease in its early stages. Her innovation is to use gapped metallic nanorods as nanoelectrodes attached to microchips. These nanorods enable her to study different ways to modify the gap with a probe sequence that allows selective binding of the analyte to achieve more sensitive detection limits. Her research is helping to develop biosensors with enough sensitivity to detect the presence of an infectious agent in the latency stage of Chagas' disease, which in turn will improve the efficiency of therapeutic treatments and quality of life for patients.

Chagas' disease affects 13 million people who suffer from irreversible cardiac lesions causing 500,000 deaths annually. Current detection methods are not sensitive enough to detect the disease in its early stages, and many people remain unaware that they are infected with the causative parasite *Trypanosoma Cruzi*.

When she returns to Argentina, Laura plans to teach at the National University of Córdoba.