

# CLIFF-GRADS Alumni Profiles

Round 3

Argentina Edition

## Argentina Alumni

**Vanina (Vani) Giselle Maguire (National University of San Martín) was hosted by Estación Experimental del Zaidín (CSIC, Spanish Research Council)**



My professional career and the possibility of travelling to other countries has made me interested in agricultural/livestock systems and their environmental impact, especially in their greenhouse gas emission potential. Having the chance to contribute, in part, to the knowledge of the mitigation of these emissions is personally satisfying.

During my research stay at EEZ-CSIC in Granada, Spain, I contributed to a project focused on enhancing animal feed efficiency and reducing methane emissions using tannin-rich *Lotus* species in cattle diets. Various *Lotus* types, phenological stages (vegetative vs. flowering), and inclusion levels were tested in in vitro assays simulating rumen fermentation. Key findings indicated that higher *Lotus* inclusion (45–60%) reduced methane emissions and gas production, particularly in the flowering stage, likely due to higher polyphenol content. *L. corniculatus* showed the highest polyphenol levels, and although species didn't differ significantly in methane production, phenological stage did. Additional degradation and digestibility trials confirmed the nutritional and environmental potential of these legumes.

Besides this project, I participated in other in vitro trials under the EU H2020 MASTER project and with Pancosma SL, testing methane inhibitors and plant extracts to improve rumen function. Despite COVID-19 disruptions, I benefited from rich training in lab techniques, data analysis, and international collaboration through the CLIFF-GRADS program. The experience highlighted the value of global research partnerships and advanced my expertise in animal nutrition and sustainable livestock systems.

## **Alumni hosted in Argentina**

**Cham Donald Adégbéïga ALABI (*University of Parakou, Benin*) was hosted by *National Institute of Agricultural Technology (INTA)***



My name is Cham Donald Adégbéïga ALABI. I was born in Cotonou (Benin) the 22nd February. I'm research assistant at the laboratory of Ecology, Health and Animal productions (LESPA) and PhD student at the University of Parakou (Benin) where I study relationship between livestock, land management and evaluation mitigation strategies of methane emissions. My thesis is about the Quantification of enteric methane emission in semi-intensive sheep farming. This study will help to develop

models for estimating the quantities emitted based on the amount of dry matter, and finding the strategies that we can use to mitigate the methane emission.

I am very passionate about animal science. I am interested in studies related to greenhouse gas emissions from cattle farming and mitigation measures of their effect on global warming. I think that why I choose this career about animal production and therefore nature protection. I like updated knowledge in my interest topics.

My research stay took place in two steps: one at INTA of Santiago Del Estero and the other at INTA of Castelar both located in Argentina. At INTA of Santiago Del Estero, the project I participated in aimed to determine and quantify enteric methane emissions in cows of the "Braford" breed (resulting from the cross between Hereford and Brahman breeds) using the SF6 marker technique. SF6 (Sulfur hexafluoride) is a colorless, odorless and chemically stable artificial gas that does not react with other substances at room temperature. This SF6 gas was previously introduced into small capsules and then introduced into the rumen of these cows which were divided into two groups: the first one was fed with cottonseed and the second without cottonseed. Afterwards, cylinder tubes were placed around the necks of these cows to collect methane and SF6 emissions.

I can assert this could not have been possible had I not been a CLIFF-GRADS Awardee. This is why I want to thank the CLIFF-GRADS Program for giving me grant for this research visit in National Institute of Agricultural Technology.

**Fernanda Leite (Fluminense Federal University) was hosted by National Institute of Agricultural Technology (INTA)**



*Soil sampling in native vegetation for soil carbon stock assessment*

I am Fernanda Figueiredo Granja Dorilêo Leite, a CLIFF-GRADS scholar from the third round from 2020. I am doing my PhD study at Universidade Federal Fluminense, in Rio de Janeiro, Brazil, with the title Greenhouse Gas Emission and Carbon Sequestration in Integrated Crop-Livestock-Forestry Systems. I was selected by INTA Balcarce (Argentina) to conduct the CLIFF-GRADS Project “Greenhouse gas emissions from crops fertilized with dairy manure in Argentina”. My supervisors in the program were

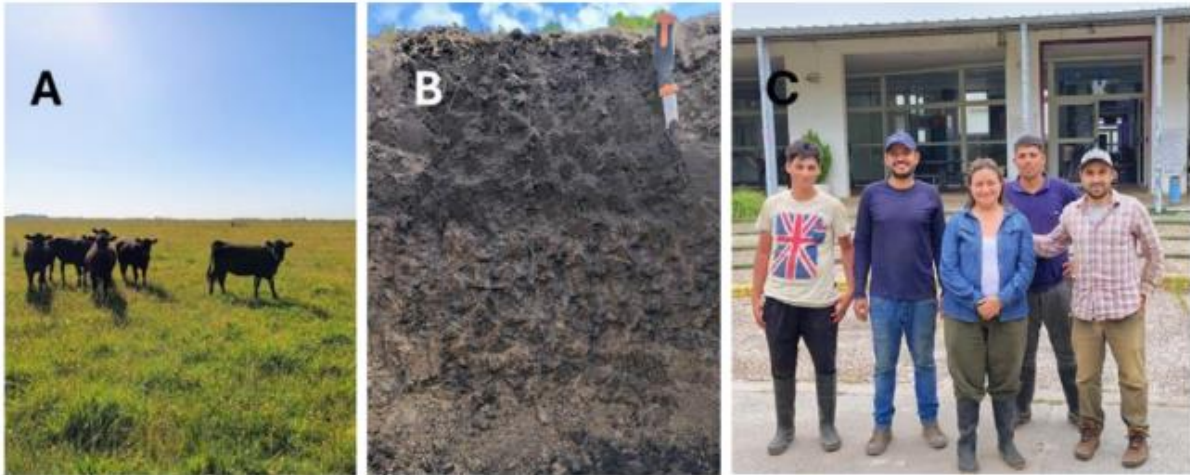
Gustavo Sebastian Cambareri and Claudia Faverin.

My experience with the CLIFF-GRADS program was unique and very enriching. Actually, my research experience started since 2020 (pandemic year) when I started to exchange papers and doing virtual sessions with my supervisors. In that point all the world was conducting virtual activities due the COVID-19 pandemic. I was supposed to start my research stay in March of 2020, but the pandemic allowed it happen just in March of 2022.

During my research stay at the National Institute of Agricultural Technology (INTA) in Balcarce, Argentina, I was able to conduct an experiment on Greenhouse Gas (GHG) measurement with the static chamber methodology. We assessed the impact of the application of dairy manure in a Pecan Silvopasture System. So, I had a lot of experience in field trial conduction, learning how to install, manage, and develop a GHG experiment. I was able to learn from the experimental design (treatments and blocks), planning of sampling dates, preparation of materials, labelling of vials, syringes, and conduct the vacuum in the vials (through a vacuum pump).

Finally, I could make networks, meet many people, develop a lot of skills, improve my scientific learnings, and research abilities. I indicate the CLIFF-GRADS program for the PhD students, it is very enriching opportunity.

**Israel Oliveira Ramalho (*Federal University of Rio de Janeiro*) was hosted by the *National Institute of Agricultural Technology (INTA)***



*Livestock system in the Argentine Pampas enriched with legumes (A), soil profile for determining carbon stocks (B) and research equipment during soil sampling (C).*

Israel Oliveira Ramalho was born in the interior of the state of Bahia in Brazil, where he lived until entering in the high school. He was graduated in Agriculture Technician by the Federal Institute of Espírito Santo-Campus Santa Teresa and after that he graduated in Agronomy by the Federal Rural University of Rio de Janeiro, where he also completed his Master's degree in Agronomy - Soil Science.

I contributed to evaluating the introduction of forage legumes in natural grasslands of the Pampean region. I participated in events such as Soil Doctors, an outreach program for producers funded by the FAO and implemented by INTA in cooperation with a prominent producers' association. This program aims to disseminate accessible techniques for evaluating soil quality indicators to rural producers in San Antonio de Areco, Buenos Aires Province. I also contributed to the completion of the report for a cooperative project involving various Latin American institutions, coordinated by INTA and funded by PROSCISUR, in which I participated during my doctoral studies.

I acquired practical skills in soil salinity analysis methodologies, including the preparation of saturation paste, 1:2.5 dilution, and electrical conductivity measurement. I also deepened my knowledge in the design and execution of pot experiments under controlled salinity and moisture conditions. Additionally, I enhanced my experience in soil sampling for carbon stock determination.

This internship was enriching both scientifically and culturally. It was highly constructive to learn about INTA, its organizational structure, and its working dynamics. The interaction with colleagues was very welcoming. Despite the short duration of my stay, I was able to build meaningful friendships with my peers.