

Voyage into Science: A Guided Tour of the I²QB₃ Research Institute

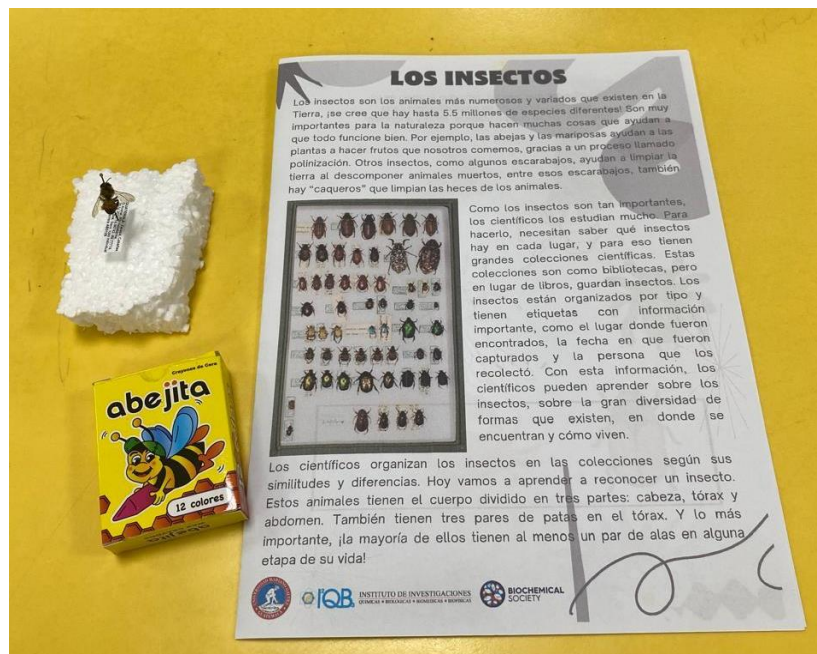
On December 4th, 2024, the "Voyage into Science: A Guided Tour of the I²QB₃ Research Institute" activity took place at the Universidad Mariano Gálvez -UMG- facilities. At 6:00 AM, a group of 48 children, aged 6 to 18, including 10 group leaders, along with their parents, gathered at the Paco Piñas Library in the town of San Martín Jilotepeque in Chimaltenango. The children were joined by 7 adults designated from the visiting institution. Together, they travelled by bus to the UMG campus, arriving around 9:00 AM. Upon their arrival, they were warmly greeted by the welcome committee of the I²QB₃ Research Institute.

The event began with a tour of the UMG university's facilities. To ensure the safety of all visitors and compliance with biosecurity protocols, the first activity within the institute was a briefing in a classroom, where the children received safety instructions for the laboratories. They also watched an educational video and were provided with disposable lab coats before entering the labs.



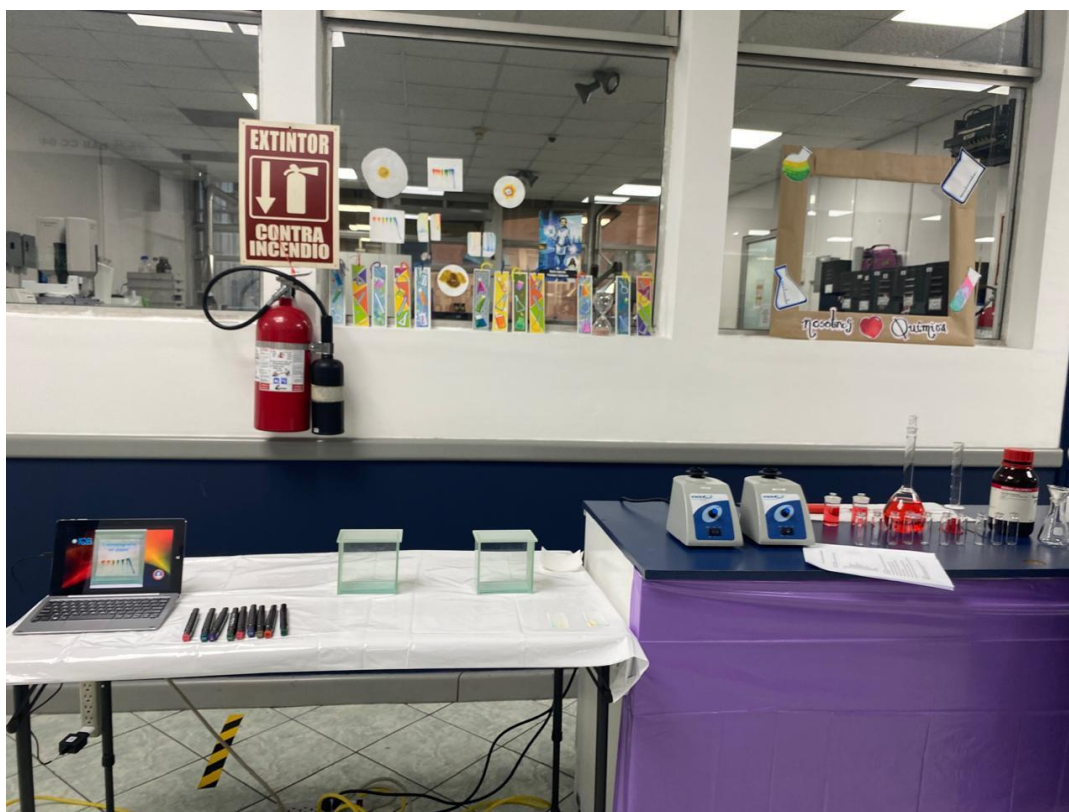
The third activity involved a scientific fair held at our research institute, where our researchers prepared six scientific stations, described as follows:

- 1) **Insect's station:** Using a small collection of insects mounted on entomological pins, the children were introduced to the importance of reference collections and the ecosystem services provided by insects. With the aid of stereoscopes and a computer for each child, the morphological characteristics of the insect group were explained. They were also able to identify the parts of the insect body on specially prepared colouring diagrams. In addition, trivia games were organized to reinforce their knowledge, and educational materials on insects were shared with them.





2) **Analytical chemistry station:** Children understood basic processes of substance purification, by activated carbon extraction and filtering process; also, the principles of separation by observing the separation of colours by paper chromatography.

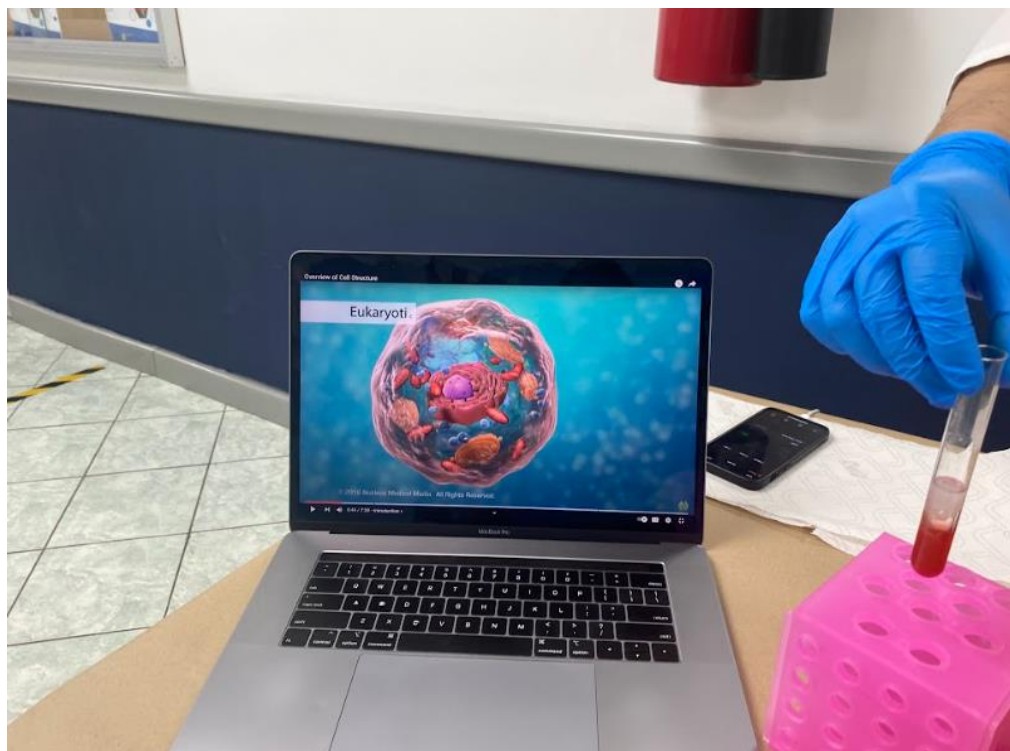




3) **Wild life station:** The children learned about the work of wildlife veterinarians through an exhibition of preserved animals and skeletons. This allowed them to compare the structures and organs of wild animals with those of humans. They were also taught the importance of conserving and protecting wildlife.



- 4) **Molecular Biology station:** The children had the opportunity to conduct a simple DNA extraction experiment using materials that can be found at home. They observed the separation of genetic material and learned about the physical characteristics and properties of DNA.



5) **Nutrition station:** The children learned about food groups, how to create balanced meals, and the importance of regularly consuming adequate amounts of fruits and vegetables for their health. They were also taught how to differentiate between natural and ultra-processed foods.



- 6) **Microbiology station:** The children observed examples of microorganisms in Petri dishes, including bacteria and fungi (using educational materials rather than actual bacteria), and learned about the importance of proper handwashing.



Later, the children moved to the university's sports area, where they enjoyed an outdoor meal with the adults in charge and scientists. It was a relaxing moment, providing them with the opportunity to reflect on and discuss the knowledge they had gained up to that point.

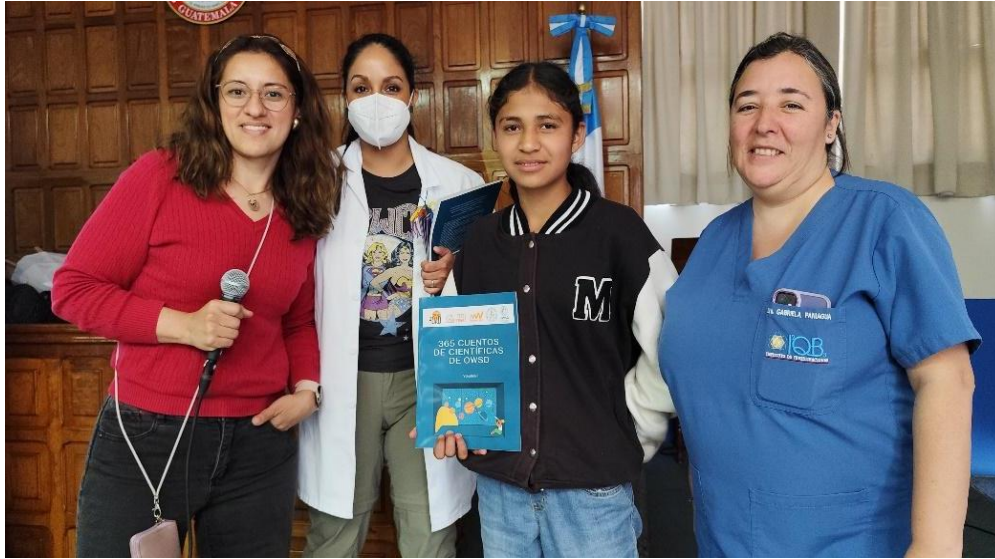


In the final session, a movie screening was organized for the children, featuring three educational videos: 1) An animated video about the study of plant-pollinator (bee) interaction networks, 2) A puppet video about air and how to study it, and 3) A video created by children discussing about Antarctica and its significance for scientists and the planet.

At the end of the session, a series of questions were posed to assess what the children had learned during the activities, and prizes were awarded. The prizes included 12 chemistry-themed bookmarks, 18 books about bumblebees, 10 copies of a children's storybook on zoonoses and the origin of COVID-19, 4 copies of "*365 Stories of Guatemalan Women Scientists*," and 1 hamburger-shaped lunchbox.







Gift kits containing scientific outreach materials for children were prepared and were given to the library coordinators to ensure that all regularly attending children have access to them. The kits included: 2 sets of scientific memory games, 2 board games about galaxies and astronomy, 2 books about bumblebees, 2 copies of a children's storybook on zoonoses and the origin of COVID-19, 2 books about pollination, 2 copies of the book *365 Stories of Women Scientists*, 2 copies of *Heroines of Science Volume II* in Spanish, 2 copies of *Heroines of Science Volume III* in Spanish, and 2 copies of *Heroines of Science Volume II* in kaqchikel. Finally, as part of the recreational activities, a Christmas piñata filled up with candies was given to be shared within the community.

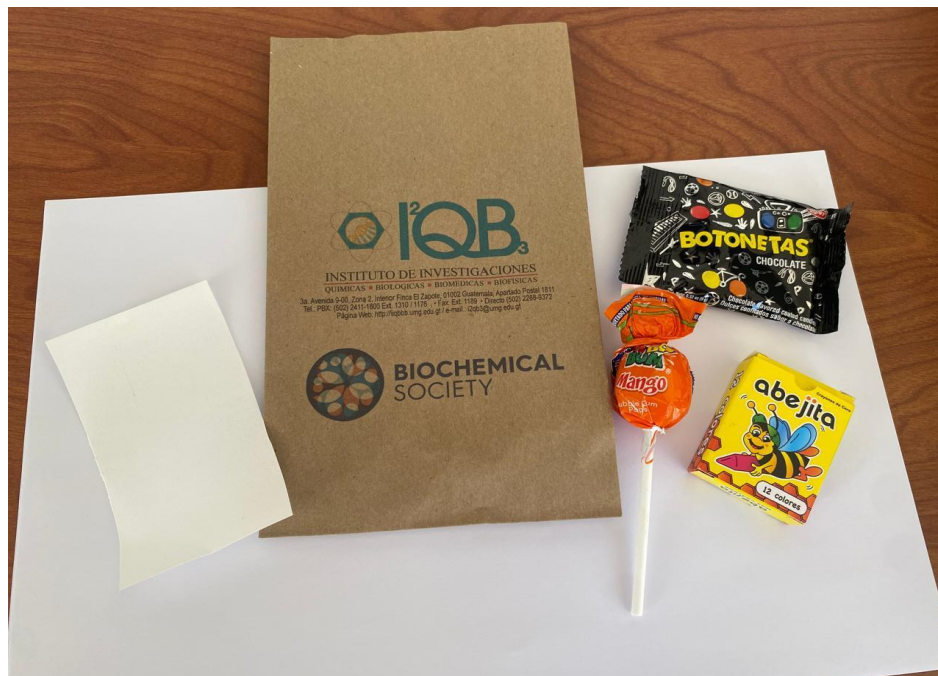




Some children thanked the researchers and authorities of the institute, as well as the Biochemical Society, for the activity.



At the end of the activity, each child was given a souvenir bag, which included candies and materials to help them replicate some of the activities carried out, such as crayons, filter paper, a disposable lab coat, a booklet on pollinators, and a copy of the book *Heroines of Science*.





The activity ended around 1 p.m. The children and their chaperones boarded the bus to return to the Paco Piñas library, where they arrived around 4 p.m.

This activity was well received by both the guests and the host institution, so our goal is to make it an annual event, expanding to other institutions with a focus on inclusive science.

The funds from the Biochemical Society grant (£498.81 = Q4567) were used to cover the bus transportation costs that took the children from the library to the university and back (£240.28 = Q2,200), for the meals cost (£204.79 = Q1875), and various stationery items and materials needed for the scientific stations (£53.74 = Q492). Other materials were provided by the I²QB₃, while the books and board games were developed as science outreach products resulting from research projects funded by other institutions.