



## **Minutes of the 2022 IANAS STEM Education and Public Outreach Workshop held in Córdoba, Argentina September 21st-23rd, 2022**

### **Attendees:**

### **Organizers**

- Bonnie Schmidt, President, Let's Talk Science
- Margarita Gomez, STEM Academia, Colombian Academy of Exact, Physical and Natural Sciences
- Debora Foguel, Brazilian Academy of Sciences
- Jeremy McNeil, IANAS Co-chair and President of the Royal Society of Canada
- Beatriz Caputto, IANAS Executive Director and President of the National Academy of Sciences of Argentina

### **Member Academies Representatives**

- Caribbean Academy of Sciences: Neela Badrie.
- Academy of Medical, Physical and Natural Sciences of Guatemala: José Rodrigo Sacahui Reyes.
- National Academy of Sciences of Costa Rica: Walter Fernandez Rojas.
- Nicaraguan Academy of Sciences: Jorge Huete.
- National Academy of Sciences of Honduras: Mario Lanza Santamaría.
- Academy of Sciences of Ecuador: Angel Gustavo Guevara Espinoza.
- Colombian Academy of Exact, Physical and Natural Sciences: Enrique Forero.
- National Academy of Sciences of Uruguay: Roberto Markarian.

### **Nexus Teams Attendees**

- Córdoba, Argentina: Natalia Gonzalez, María de los Angeles Kamaran, Cecilia Lopez, Cecilia Ordoñez, Alicia Olmos.
- Buenos Aires, Argentina: Victoria Lynch, Laura Melchiorre, Sebastián Manassero.
- Bolivia: Natalia Montellano, Celeste Rodriguez, Gonzalo Riveros.
- Ecuador: Hamilton Cabrera, Irma Castro, Jessica Medina, Lizbeth Sarmiento.
- Perú: Cynthia Vasquez, Carlos Torres, Fidel Jimenez.

The workshop started in the afternoon of Wednesday 21st, in a joint session with Presidents/Representatives of IANAS Member Academies, STEM Education experts and the Nexus Teams.

Beatriz Caputto welcomed everyone and gave special thanks to Jeremy McNeil, Bonnie Schmidt, Margarita Gomez and Debora Foguel, for making the workshop possible.

Jeremy McNeil followed with a presentation on the Royal Society of Canada and how they have been trying to integrate various aspects as an academy to serve Canada, specially



through public outreach and engagement. He presented the example of their Covid 19 task force, where they collaborated with over 500 volunteers, scientists, scholars, etc. in the making of policy briefings, research, webinars and other Covid 19 related resources. In order to reach the public of all ages and regions they built partnerships with Globe and Mail (the largest English newspaper in Canada) where they published all their resources and Let's Talk Science, which enabled them to extend their outreach to children, youth and educators. This task force turned out to be very successful and it is a clear example of how collaborating with other institutions can help move things forward, something that can be applied to STEM Education in all countries.

After the presentation, Bonnie Schmidt gave an introduction to the workshop, where she talked briefly about Jeremy McNeil's career and how they ended up working on this IANAS project. She explained how she was invited to participate in a series of meetings with a panel of STEM education experts and IANAS members, as part of the relaunching of the IANAS Science Education Program. After these meetings, they published a report with a series of recommendations on how to improve STEM education in different countries. Following a short overview of the report, Bonnie described how the workshop dynamic was going to be and its main goals.

Margarita Gomez and Debora Foguel, proceeded to introduce themselves and briefly went through their careers working in STEM Education as well as their contributions to the report and its recommendations.

Afterwards, Bonnie asked the Nexus Teams what their interests were to make them participate in the workshop, members from the different teams presented themselves and shared their expectations regarding this project, which then led to a discussion involving the present IANAS Member Academies Presidents/Representatives, about the importance of STEM education and IANAS supporting projects such as this one. It was also discussed what is important to focus on, how IANAS can help and the importance of working with the public sector in a politically smart way.

Wednesday's session concluded with some words from both IANAS Co-chairs, Helena B. Nader (Brazilian Academy of Science) and Karen B. Strier (U.S National Academy of Sciences) where they expressed their gratitude with IANAS for this project and gave special thanks to Beatriz Caputto for hosting the IANAS GA and STEM Education workshop, and to the STEM Education experts for their dedication in putting together the workshop.

On Thursday, the Nexus Teams and the STEM Education experts got together at 9 am. Bonnie Schmidt, Debora Foguel and Margarita Gomez gave an introduction to the workshop, where they stated the goals of the project, what the working agenda would look like and some recommendations on how to approach the making of Nexus Team's pilot projects. It was followed by a presentation of each Nexus Team where they introduced themselves and gave a brief background on their careers and where they were coming from.



For the rest of the meeting, each Nexus Team worked on developing their own pilot project with the objective of encouraging the engagement on STEM Education in their respective countries on a public and/or educational level.

The STEM Education Workshop came to a closure on Friday morning with a joint session with some IANAS Member academies Presidents/Representatives and the Nexus Teams. Bonnie Schmidt talked about Thursday's working session, what it was like getting to know the groups and working with them on their pilot projects, what topics were discussed, among other things. It was followed by a presentation by each Nexus Team describing its pilot project.

#### **Cordoba Nexus Team (Municipality)**

They presented their pilot project which consists of generating professional training courses for kindergarten and primary school teachers and trainee teachers with the scientific community, specially with the National Academy of Sciences of Argentina. They are also planning on strengthening and supporting school projects related to STEM, as well as generating common areas between science tutors, teachers and trainee teachers.

#### **Buenos Aires Nexus Team**

This team worked on the idea of developing a post graduate certificate in Climate Change STEAM (Science, Technology, Engineering, Arts and Mathematics) Education. They plan on carrying out this project by collaborating with IANAS, scientists, teachers and professionals in the industry.

#### **Peru Nexus Team**

Their pilot project involves organizing a theoretical-practical workshop about the transverse role of proportional reasoning in STEM education. It would be aimed at primary school teachers (between 4th and 6th grade), collaborating with researchers in mathematics, biologists, physicists, chemists, engineers and other professionals in STEM fields.

#### **Ecuador Nexus Team**

The Ecuadorian team plans on arranging a work agreement between the Academy of Sciences of Ecuador (ACE) and their ministry of education, to develop a pilot project in three schools of different regions of Ecuador, with the objective of encouraging knowledge and confidence in the teaching and learning of mathematics through STEAM education. This will allow the ministry of Ecuador to then implement this project and develop public policies in education on a national level. Apart from working with the ACE and the Ministry of Education of Ecuador, they plan on collaborating with different IANAS Member Academies, teachers and institutions of higher education.

#### **Bolivia Nexus Team**

The pilot project of this team focused on strengthening STEM education primarily in 5th and 6th grade of secondary schools by capacitating teachers of the four STEM subjects taught at Bolivian schools (Mathematics, Physics, Chemistry and Biology) on how to approach these



topics. In order to achieve this, they would collaborate with different universities which may have the necessary funding, as well as the National Academy of Sciences of Bolivia, teachers and experts in each of the four areas.

A lively discussion among all participants arose after the presentations, where groups received feedback and comments from everyone present.

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Having covered the workshop agenda, Margarita Gomez talked about different points that the Nexus Team's projects had in common, how IANAS can help develop each team's proposal and quickly went through everything the participants should focus on and take into account while carrying out these projects. Natalia Gonzalez from Cordoba's Nexus Team followed by explaining how communication between the teams would be going forward, having monthly virtual meetings and updating each other on their progress.

Debora Foguel thanked Beatriz and emphasized on the importance of the projects Nexus Teams will carry out and how they must not lose the enthusiasm after completing the workshop. Finally, Beatriz Caputto also expressed her gratitude to everyone and gave special thanks to Bonnie, Margarita and Debora. The session ended with a farewell group lunch.