Country Focus: Argentina and Costa Rica

With the support of an ITEN Seed Grant, several collaborators from Argentina and Costa Rica developed and are running a professional development program for teachers, ***Introduction to the use of remote laboratories in STEM education.***

Collaborating institutions include the **Association of Physics Professors of Argentina** (APFA), the **Center for Research and Support for Scientific Education** (CIAEC) of the **University of Buenos Aires** (UBA), and with external evaluation from researchers at the **Remote State University** of Costa Rica.

The course aims to offer a continuing education experience that allows participating teachers to learn about remote experimentation practices and guidelines. The funds facilitated the purchase of various technological equipment that allows the collection of remote scientific data.

Remote laboratories are composed of both software and hardware technology that allow teachers and students to carry out real experimental activities by manipulating the instruments from a distance. These laboratories, accessible from anywhere in the world and at any time, provide the opportunity to work with the complexity of the empirical data and with a high level of sophistication.

150+ **teachers** have participated in the initial rollout and pilot test of the modules

Vista de pantalla

Vista de perspectiva

The course, which includes **60 hours** of work and runs from September to November 2021, is aimed at the following audiences:

- students teachers in STEM fields
- middle and high school STEM teachers

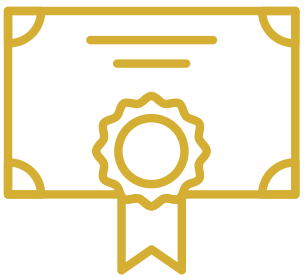
To reach teachers, the opportunity has been shared via three professional associations:

- Association of Physics Teachers of Argentina
- Association of Teachers in Chemistry of Argentina
- a consortium of science education research groups in Argentina.

At the end of the program, the leadership team hopes to build a STEM Remote Laboratory (LRSTEM) that can be used in the designed sequences and made available to other interested teachers.

This prototype brings together several disciplines in a single experiment, with the intention of achieving the interdisciplinarity that is part of what STEM methods aspire to achieve.

Participants who successfully complete the mandatory activities will receive a certificate from the organizing institutions.



Goals:

- To recognize and to state learning objectives related to experimentation in digital contexts.
- To become familiar with and to use the different remote learning devices.
- To develop and sequence activities that include the use of remote laboratories.
- To identify and analyze the main technical, didactic, epistemological, and semiotic characteristics of activities that include the use of remote laboratories.

Unit 1: Experimental activity in digital environments

Unit 2: Remote Lab

Unit 3: Design of experimental activities mediated by technology