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**Abstract** – In the last decade, the development of the STEM careers has carried the problematic of the gender gap. With the purpose of creating better strategies and mechanisms for the attraction, access and orientation of women into the STEM field in Latin America, the W-STEM Project implemented attraction campaigns and dissemination activities where each partner designed strategies. However, those strategies must be analyzed in order to measure their effectiveness and adapted to the new conditions due to the COVID pandemic. In this poster, Uninorte presents the strategies implemented in the institution, analyzing the three main axes of the action plan, as well as the advantages and disadvantages, aiming to create a better approach.

## Introduction

In today's world, there still is a gender gap in STEM occupations, fueled by gender stereotypes and extra challenges faced when women enter a male-dominated workspace. According to the World Economic Forum [1], female students and employees are under-represented in STEM related fields, with less than a third of female students choosing to study higher educations courses in subjects like math and engineering. In fact, only around 30% of the world's researches are women and those working in the STEM field publish less and often receive less pay. This is a worldwide problematic but can be affected by other aspects like the development of the country in matter. In Latin America and the Caribbean, only 5 of the 33 countries analyzed have human development index considered as 'high', according to UNESCO [2]. Which leads us to pay special attention to the mater in those countries.

In order to find solutions and engage women into STEM, the W-STEM project was funded, under the European Union through the ERASMUS+ program. With 15 partners around 10 countries, the project aims to improve strategies and mechanisms of attraction, access and guidance of women in Latin American STEM higher education programs. One of the most important points in the work plan are the attraction campaigns. The attraction campaigns are activities organized by each partner so that female senior students in high school could make a choice regarding their careers path without stereotypes or misinformation about careers in science, technology, mathematics and mathematics, showing them all the possible choices. Each partner developed its own strategies set to be applied in the institution, but all were designed with the same purpose: engage women into STEM careers.

## Context

As mentioned before the problematic of gender gap is a global problematic and no country is alien to it. In Colombia only 37,3% of the researches are women [2] and to this day there is no governmental program for women in science. With an eye toward the parity of men and women in STEM fields, the Universidad del Norte (Uninorte), the most important university in the coast of Colombia, became member of the W-STEM project. As co-coordinator, the design of strategies was a key point in the role of the institution. With only 34,2% of STEM students in Uninorte being women, and sometimes even less than 10% in some majors, assuring the effectivity of the activities became one main task.



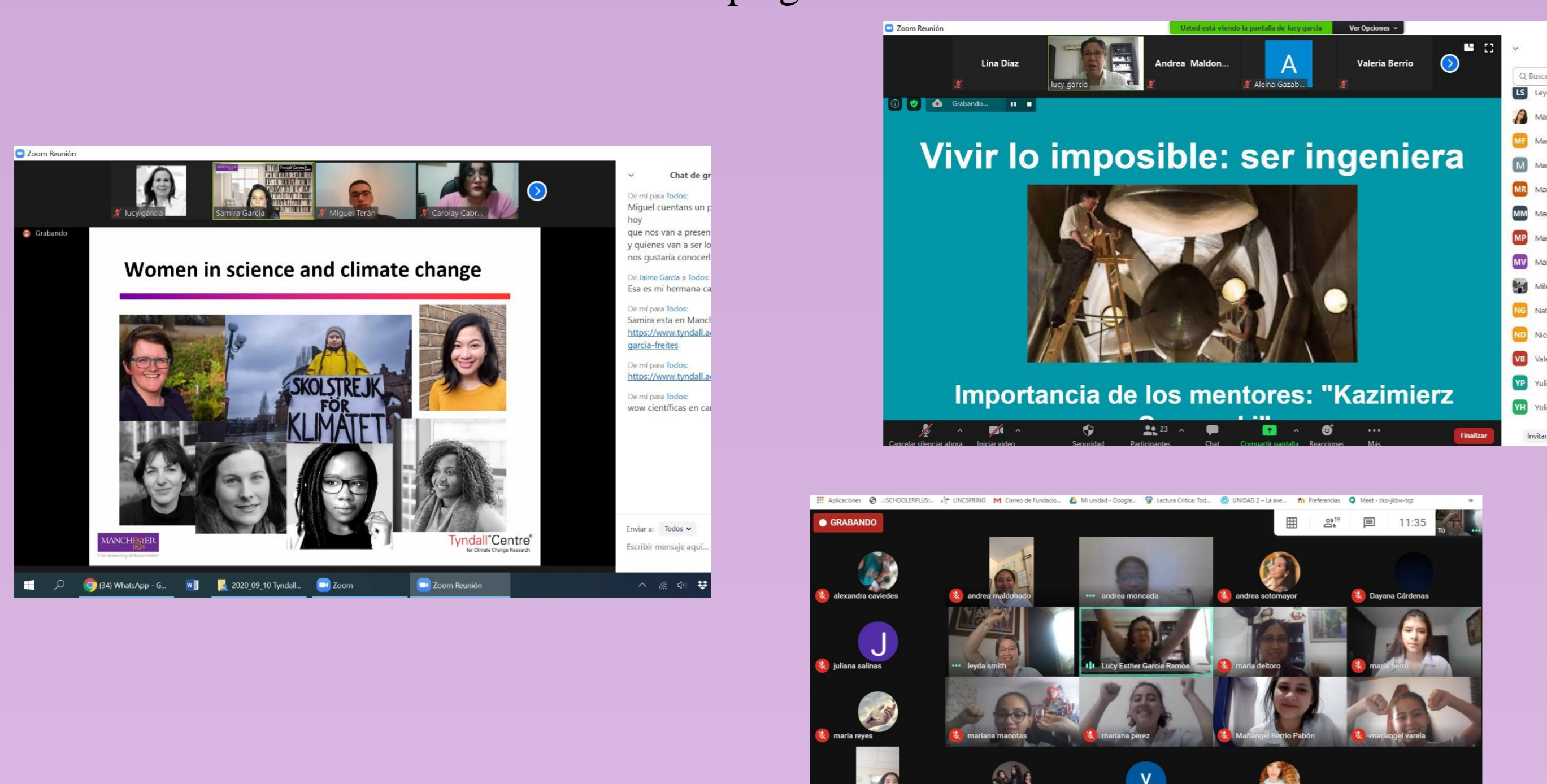
ONLY  
**34,2%**  
 OF STEM STUDENTS IN UNINORTE ARE WOMEN

## Description

Some of the practices were developed at the beginning of the semester with the expected vision of virtual school, some were developed along the way, analyzing the results of the activities made. The practices in the institution can be classified in 3 main axes:

### 1. Attraction Campaigns.

Aimed to inform the high school student girls about what is it like to be studying or working in a STEM field being a woman. Uninorte oversaw the referent documents which we designed as a checklist so it would be easy for all the partners to follow and adapt to their campaigns One of the challenges for the activities was to reach the girls and motivate them to participate, due to the lack of personal contact forced because of the pandemic. According to the current situation, it wasn't possible to go to the schools and meet the girls personally, so one of the most efficient ways to contact the students were the teachers. A strong communication with the principals and teachers allowed the active participation of the girls in the activities, this was the case with two schools who had active attendance in our campaigns.



Another alternative to invite the girls was through e-mail. In order to collect data from the people signed up for the activities had to fill an inscription questionnaire that included questions with personal information, school information and interest in the STEM field. It was a good practice that was developed since the beginning of the attraction campaigns that allowed us to analyze the statistics of attendance.

### 2. Dissemination

Activities with the main objective of addressing the issue of women in STEM fields and informing the community about the project were developed for a wide public, from students and teachers to researchers and experts in the field. A good practice identified is the presence of special guests in the activities. Those with knowledge in the matter were able to present different points of view on how to address the issue which led to a better understanding of the problem and the development of better practices such as the collection of data. One of the most important activities was the Cátedra Europa. In this event different academics, professionals and experts shared the barriers and possible solutions they identified in fields like higher education, industries and technology.



### 3. Politics and strategies aimed at the sustainability of the project.

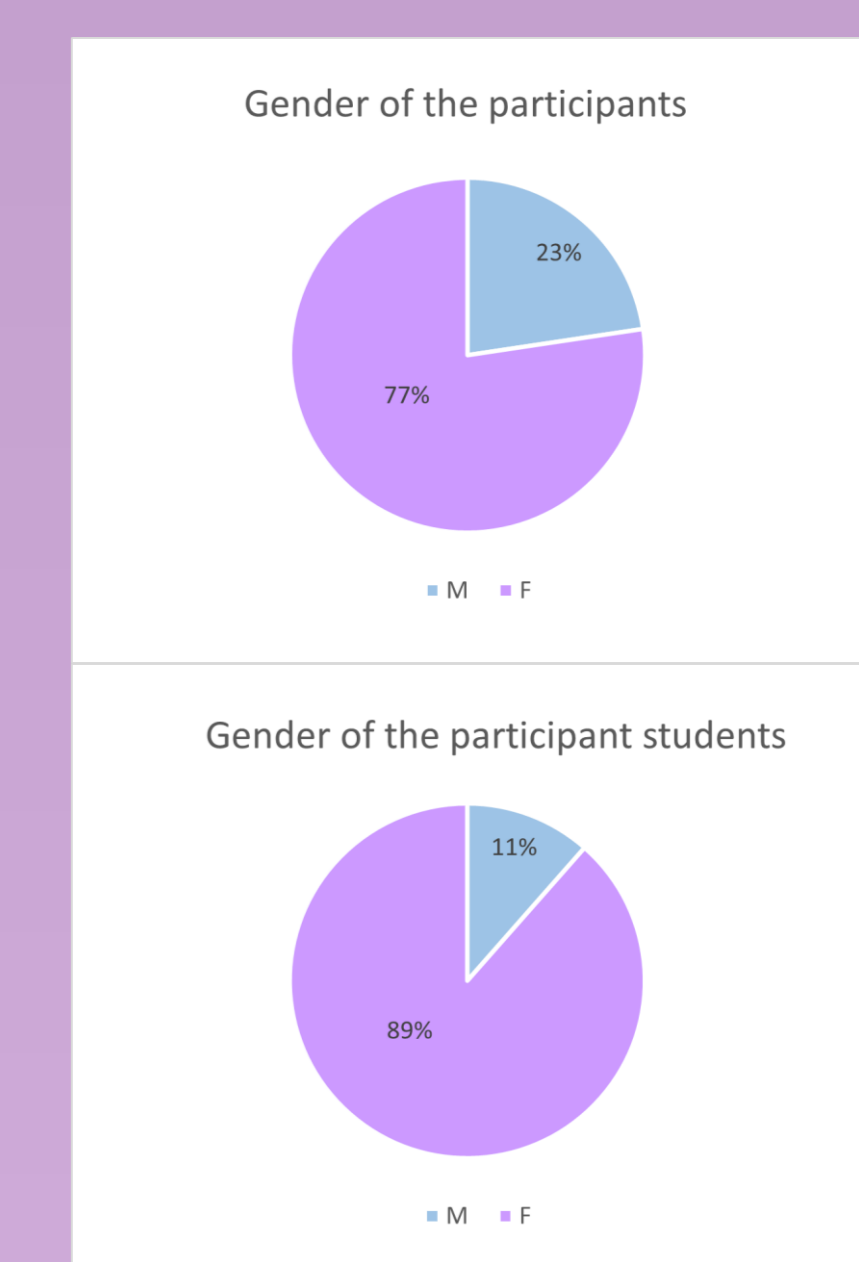
In order to guarantee the sustainability of the project in Uninorte, different offices were involved in the realization of the activities, so it was a co-joint effort and a way to create practices that last in the university. The alumni office was contacted in order to find women who graduated in STEM fields that were interested in the project and participating in the activities to present their experience with the girls and their work as engineers. The admission office was contacted in order to set a joint database with the information of senior students who showed interest in studying in Uninorte, so invitations to the activities could be sent. The coordinators of the engineering programs were contacted to involve the department in the process of informing the girls and encouraging them to study engineering, as well as student groups such as IEEE (electrical and electronic engineering) and CEIM (mechanical engineering).

The University Welfare office, that is focused on the integral development of students and support of sports, arts and student groups was contacted in order to start the W-STEM UNINORTE student group, in which university students were enrolled to participate in the activities and generate ideas for the spread of information so the STEM women in Uninorte feel supported and motivated. Finally, the corporate relations and alliances office was contacted in order to create a W-STEM scholarship in Uninorte. This was a key contact since they allowed the visibility of the project within the institution and promoted the cause so there could be a beneficiary girl studying a STEM career in the university.

## Results

It was found that a strong relation with the teachers was the best way to attract the girls to the activities, since the invitations via e-mail showed less efficacy because the number of students invited was considerably high and the attendance of those invited was poor. Also, the participation of special guests in the Catedra Europa activity inspired the idea of creating feedback questionnaires designed to know the satisfaction with the activity and how it changed the perspective of the students. Finally, for the sustainability of the project the most important thing is to make sure the strategies last even when the project is finished, for example, make W-STEM an international student group and opening the scholarship to international funding programs.

Activity	Invitations	Registered	Participants			Students		
			M	F	Total	M	F	Total
Cinema W-STEM	2070	38	9	46	55	0	22	22
Cinema W-STEM II	24	24	0	24	24	0	24	24
Tour Tyndall	2070	36	10	30	40	3	12	15
Programming with CODE	2070	102	10	74	84	8	66	74
Renewable energy	6016	42	38	37	75	6	6	12
R-Ladies activity	6016	33	0	18	18	0	1	1
<b>Total</b>	<b>18266</b>	<b>275</b>	<b>67</b>	<b>229</b>	<b>296</b>	<b>17</b>	<b>131</b>	<b>148</b>



## Conclusions

Summarizing, the good practices regarding the attraction campaigns are good communication with the teachers and principals of the schools, the collection of data with registration and feedback questionnaires. Regarding the dissemination campaigns the participation of international guest with knowledge in the matter was a good practice since their perspective allowed the design of new strategies and a new view of what was missing in the planning. Last, the sustainability of the project requires the settlement of the practices within the institutions, that meaning, they need to be design in a way they continue going once the project is finished, a good way to implement this is to contact the different offices in the universities and involving them with the cause.

## References

[1] Kahn, S., & Ginther, D. (2017). Women and STEM (No. w23525). National Bureau of Economic Research.  
 [2] Alessandro Bello, "LAS MUJERES EN CIENCIA, TECNOLOGÍA, INGENIERÍA Y MATEMÁTICAS EN AMÉRICA LATINA Y EL CARIBE", ONU MUJERES, Mayo 2020.