

STEM
4Girls
uc3m



UC3M program to promote STEM in girls

Celeste Campo

Outline

Introduction.

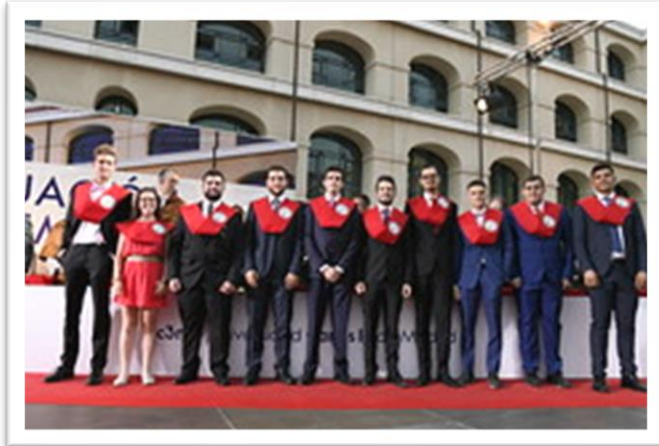
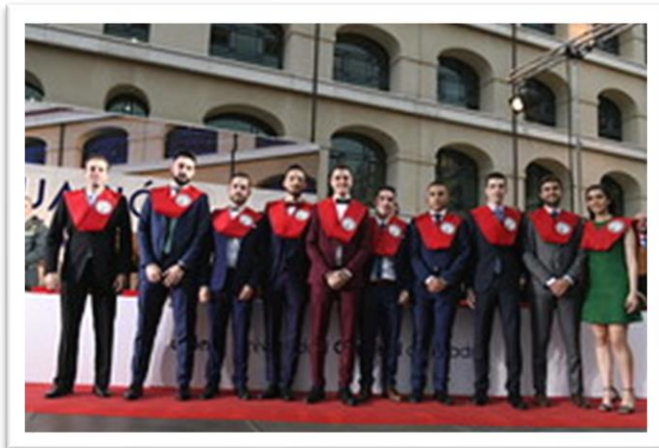
Program activities and results.

Conclusions and lessons learned.

Future lines.

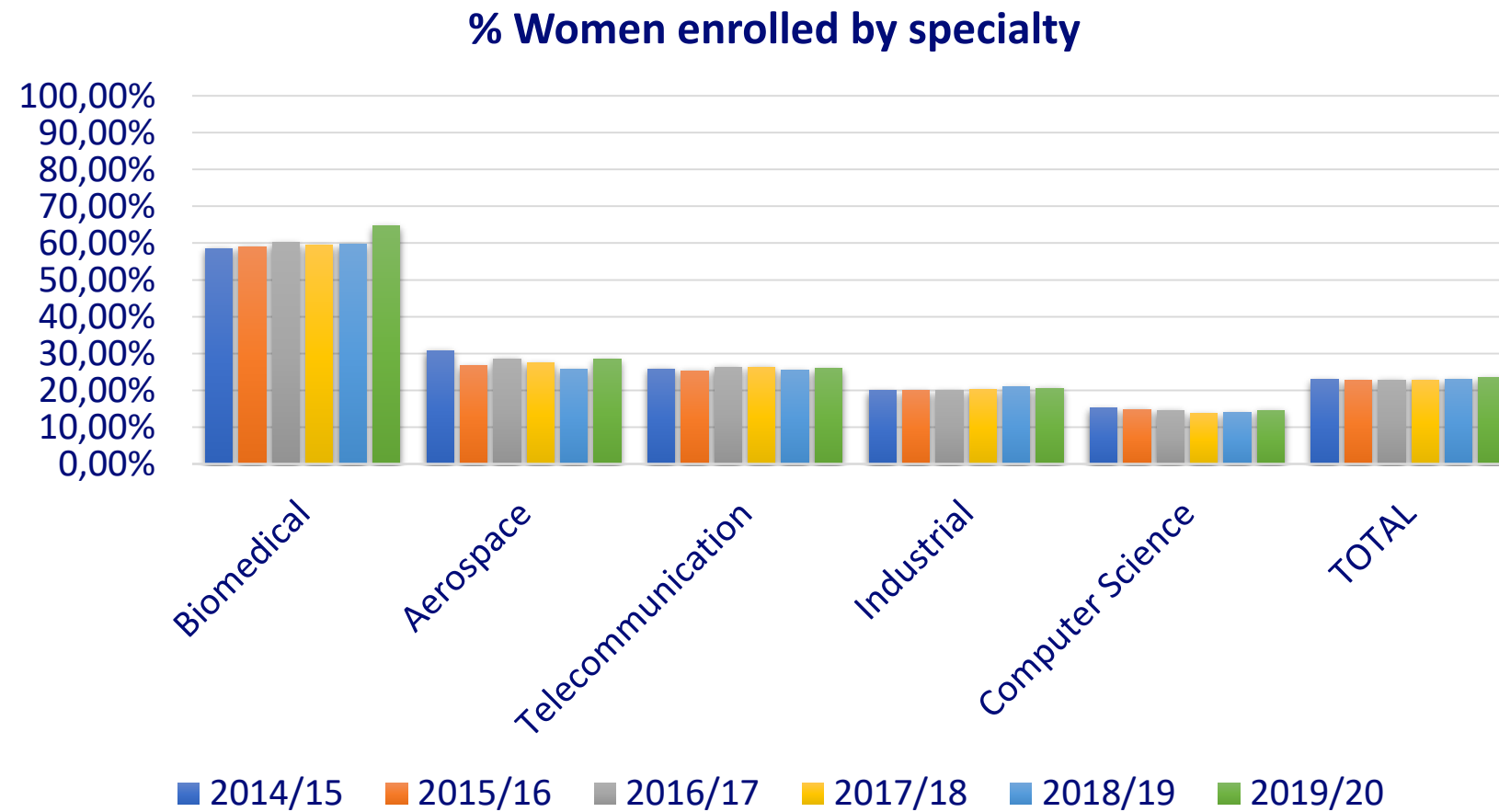
Introduction

In 2016, I attended to several graduation ceremonies...



30 men
6 women

Introduction



Introduction

“Woman and Engineering”
from the Royal Academy of
Engineering.



Introduction

UNESCO: *Cracking the code: Girls' education in STEM*



PRACTICAL ACTIVITIES

MENTORING

ROLE MODELS

Program activities



MENTORING PROGRAMS

SCENIC ARTS AND TECHNOLOGY

TECH-FRIDAYS

REGIONAL CONTESTS AND GYMKHANAS

SESSIONS FOR RELATIVES

COURSES FOR SECONDARY TEACHERS

Program activities



MENTORING PROGRAMS

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SESSIONS FOR RELATIVES

COURSES FOR SECONDARY TEACHERS

Since 2018, we are a **Technovation Club**:

- Teams: girls from Secondary Schools.
- Mentors: students from UC3M.

We have included three UC3M teachers:

- An expert in Technology.
- An expert in Business models.
- An expert in Media.

Mentoring programs

2020

14

28

58

2019

10

24

51

2018

10

19

42

TEAMS

MENTORS

GIRLS



2020

2 semi-finalists teams in
Global Contest

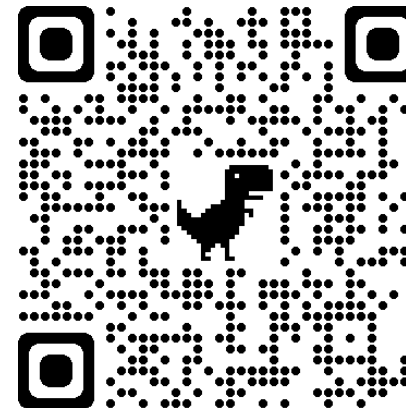
2019

2 winning teams in Madrid
Regional Contest

UC3M
Team
Finalist

2018

2 winning teams in Madrid
Regional Contest



<https://youtu.be/aJnZmj42BPE>

Mentoring programs

Since 2019, we participate in the **STEM Talent Girl** program from ASTI Foundation.

2021

21

2020

19

2019

14

MENTORS

Program activities



MENTORING PROGRAMS

SCENIC ARTS AND TECHNOLOGY

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Scenic Arts and Technology

“The girl who dreamed...”

created by Lucía Miranda (The Cross Border) based on interviews to UC3M women researchers.

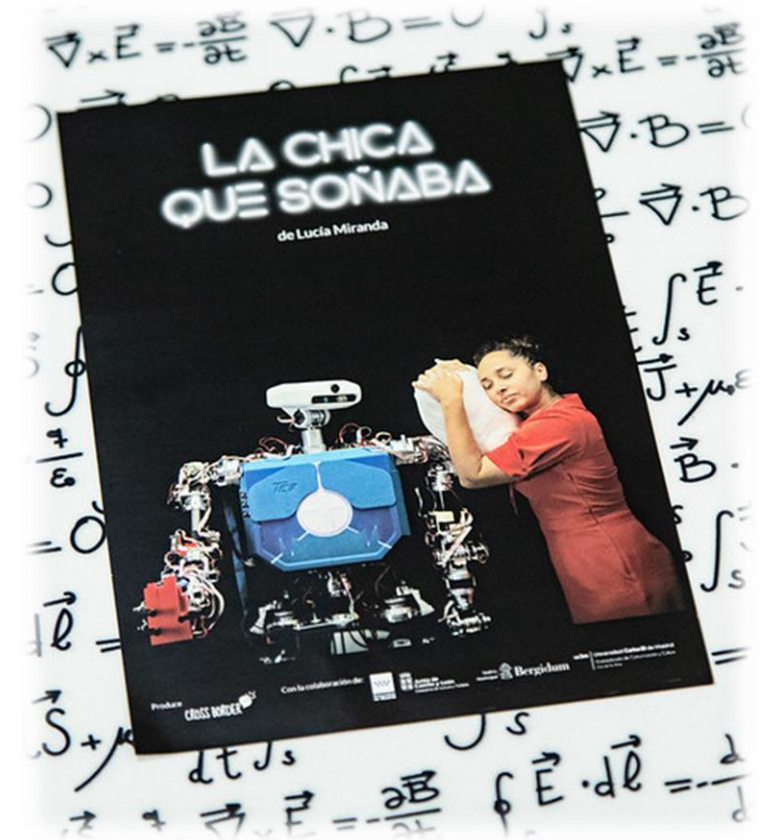
313

2019

676

2020

SECONDARY SCHOOL STUDENTS



Scenic Arts and Technology



Scenic Arts and Technology

“El enigma de Agustina”

Secondary students watch the film
and work with their teachers based on
a guide.

Discussion in a virtual event.

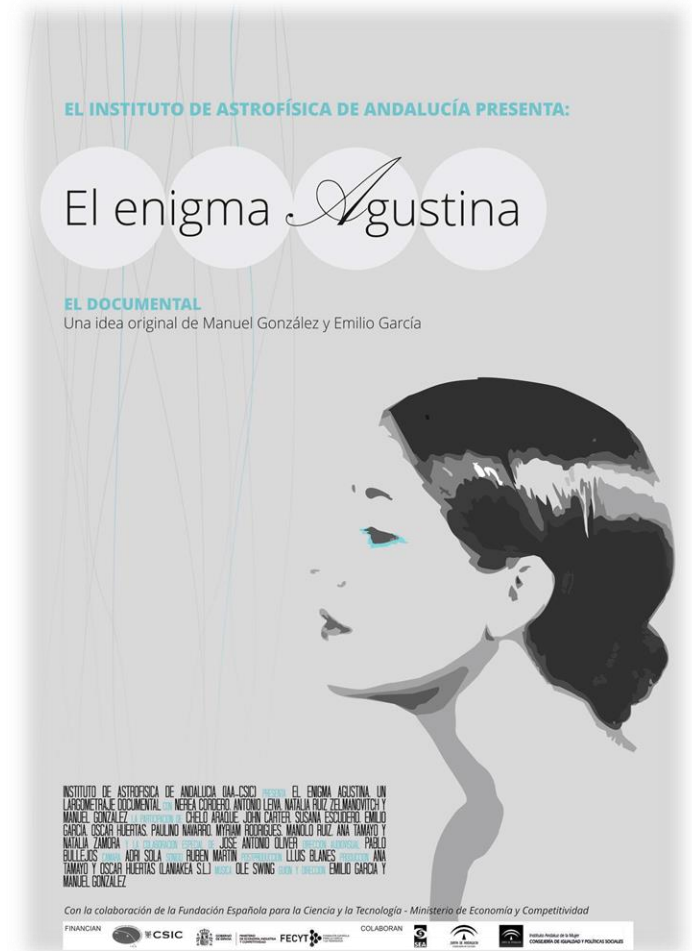
2021

7

SECONDARY SCHOOLS

272

YOUTUBE VIEWS



Scenic Arts and Technology



Program activities



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Tech-Friday for girls

Since 2018, we schedule one Tech-Friday next to February, 11th only for girls.

Workshops about:

3D bio-printing

Materials technology

Aircraft construction

Micro-robotics

Cybersecurity

Smart cities design

Chatbots development

Web accessibility

Mobile communication networks

Internet of things

Tech-Friday for girls

2020

112

2019

97

GIRLS



Program activities



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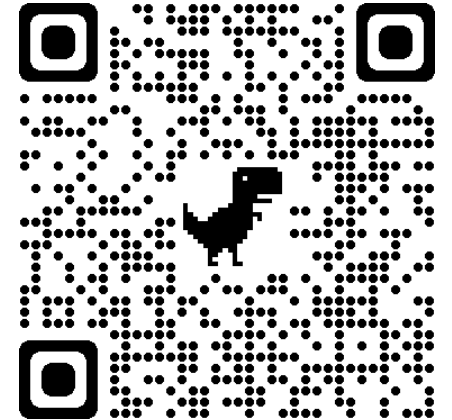
21

Regional contests and Gymkhanas

In 2018 and 2019, we organised together with Power To Code, Technovation ambassador in Spain, the Technovation Regional Contest in Madrid.



Regional contests and Gymkhanas

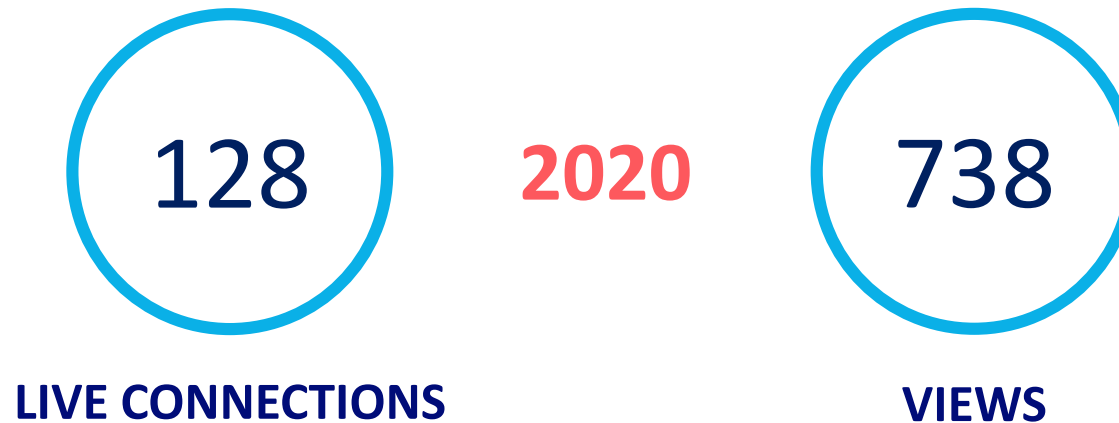


<https://youtu.be/MhY-ElP9ygY>

Regional contests and Gymkhanas

Due COVID-19 pandemic, in 2020 and 2021 there is only Celebration Events.

In 2020, we organise an event on YouTube with the participation of the 6 teams of Madrid with best scores.

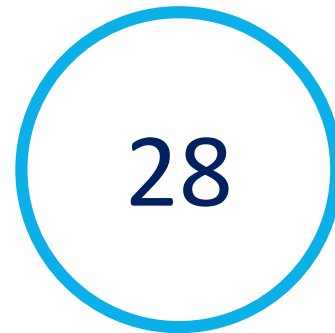


Regional contests and Gymkhanas

In 2021, we organized the Gymkhana Florence Nightingale about data science for students from 12 – 16 years old:

- Team leader a women.

Final challenge will be on April, 19th in an online event.



SCHOOLS

2021



STUDENT TEAMS

Program activities



MENTORING PROGRAMS

SCENIC ARTS AND TECHNOLOGY

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REGIONAL CONTESTS AND GYMKHANAS

SESSIONS FOR RELATIVES

COURSES FOR SECONDARY TEACHERS

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Sessions with relatives

It is very important implicate relatives in these programs:

- Welcome sessions.
- Guide tours.

Program activities



MENTORING PROGRAMS

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Courses for secondary teachers

It is very important implicate secondary school teachers in these programs:







- We are working in several workshops based on our technical Fridays.
- We will include a module on gender perspective.

STEM4GirlsUC3M Role models



[YOUTUBE PLAYLIST \(In Spanish\)](#)

- 1  **Concha Monje**
Centro de Orientac
VISTO 3:50
- 2  **Paloma Díaz - I**
Centro de Orientac
3:44
- 3  **Ana García - Inv**
Centro de Orientac
3:17
- 4  **Belén Ruiz - Inv**
Centro de Orientac
3:35
- 5  **Ana Tajadura - I**
Centro de Orientac
3:53
- 6  **Adaliz Ferreiro**
Centro de Orientac
2:44

- 7  **Paloma Martínez -**
Centro de Orientación a
4:03
- 8  **Cristina Quilez - Inv**
Centro de Orientación a
2:26
- 9  **María Fernández - I**
Centro de Orientación a
2:24
- 10  **Teresa Onorati - Inv**
Centro de Orientación a
3:26
- 11  **Lourdes Moreno - I**
Centro de Orientación a
3:01
- 12  **Pilar Guerrero - Inve**
Centro de Orientación a
2:09

Conclusions and lessons learned

- Girls need to meet girls with their same personal likes:
 - In some activities, I heard: *“I met a girl like me!”*
 - University students are very good mentors for secondary school students.
- Girls need to know “role models”:
 - But not only “Noble prize winners”.
- Telecommunications and Computer Science are topics less attractive for girls:
 - Media stereotypes?
- We also have a lack of sTEm vocation in boys.

Future lines

- To take action at an earlier age:
 - Some girls do not change the choice of their studies.
 - ...although, they value more STEM subjects.
- To improve activities for secondary school teachers.
- To propose new activities for families.
- “Out of my reach”:
 - We have to change gender stereotypes in the media.
 - We have to provide better science content in media for primary school children.

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Thanks!