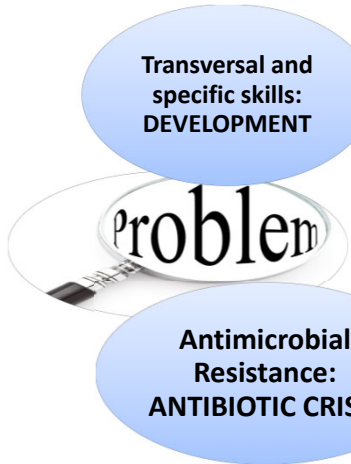


# ACTIVE AND COLLABORATIVE LEARNING THROUGH A PUBLIC HEALTH CHALLENGE: ANTIMICROBIAL RESISTANCE AND ANTIBIOTIC CRISIS

**Rodríguez-Calleja, J.M.\*; López-Díaz, T.M.; Sierra, M.L.; Justel, A.; Moral, R.M.; Otero, A.; García-López, M.L.; Santos, J.A.**  
 Innovative Teaching Group -IHICASA, Veterinary Faculty, Universidad de León, Spain  
 \*jm.rcalleja@unileon.es



- University Students (STEM degrees)
- Pre-University Students (High Schools)

- WHO 2014 claim: world challenge
- New effective antibiotics: Priority



2012  
(U. Yale, USA)



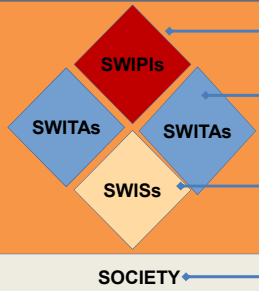
2016-2017  
(U. Complutense Madrid, Spain)



2018-19  
(University of León, Spain)

Implementation:  
TinyEarth in University of León (Spain)

## ORGANISATION



- Professors, activity coordinators  
SWI Partner Instructors
- University Students, help SWIPs and lead activity at High Schools  
SWI Teaching Assistants
- Pre-university Students, carry out the research  
SWI Students
- Public dissemination



1. Exploring microbial diversity

2. Co-Working at lab: students

3. Discovering new antibiotics

## COLLABORATIVE LEARNING (UNIVERSITY STUDENTS)



- ❑ To learn by “doing” / “collaborating”.
- ❑ To enhance specific skills (microbiology lab: management, organization and performance).
- ❑ To increase interest in research and/or teaching.



- ❑ To develop transversals skills (teamwork, communication and dissemination, decision making, responsibilities).
- ❑ To become aware of antibiotic crisis.
- ❑ Dissemination of an actual problem.

## IMPACT

### ACTIVE LEARNING (PRE-UNIVERSITY STUDENTS –High Schools)

- ❑ To learn by “doing” / “collaborating”.
- ❑ To enhance motivation on current studies.
- ❑ To awake interest on STEM degrees.
- ❑ To develop specific skills (work on microbiology lab).



- ❑ To become aware of rational use of antibiotics.
- ❑ Dissemination of an actual problem.

### COMMUNITY CHALLENGE: ANTIBIOTIC CRISIS

- ❑ Searching for new effective antibiotics.
- ❑ Dissemination antimicrobial resistance problem (antibiotic crisis):
  - University students
  - Pre-university students (High Schools)
  - Staff at High Schools
  - Families
  - News media (community/society)



### Acknowledgement

- MicroMundo/SWI@Spain network
- University of León (Spain), PAGID2018 programme

TEEM 2019

18 - 19 October 2019  
León, Spain

TEEM'19

