ual:

Who is Paula Corsini?

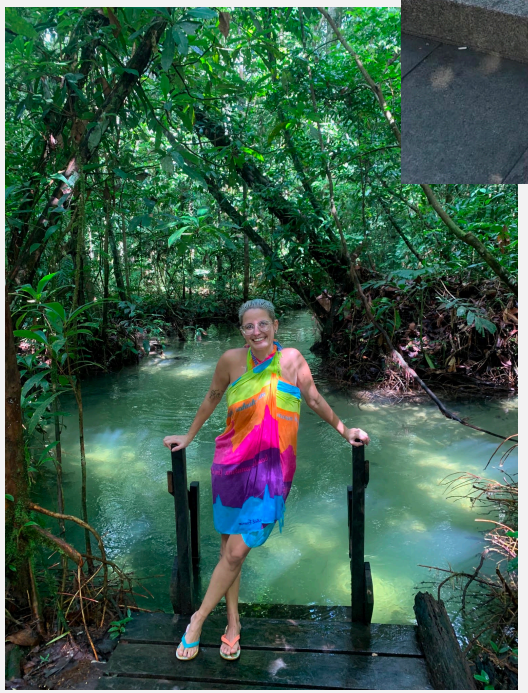
PgCert Jan/2023

Who am I?

I am Brazilian, she/her

PhD in Molecular biology

I work at GrowLab CSM

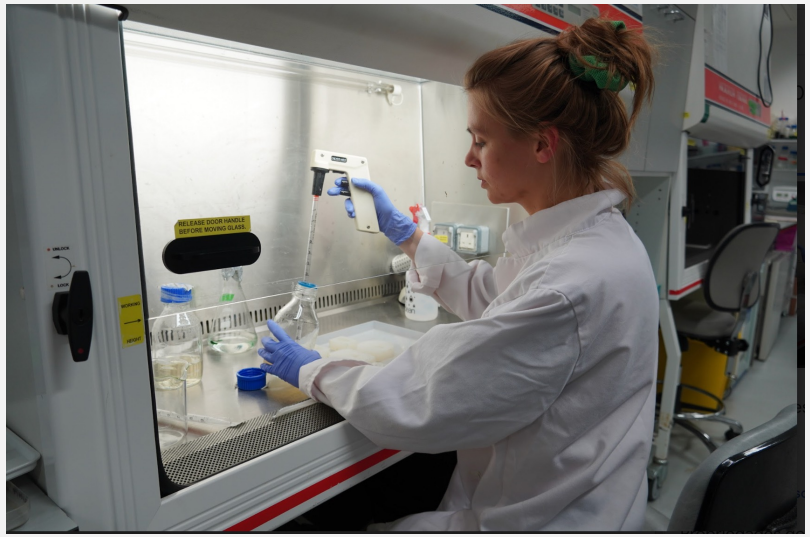


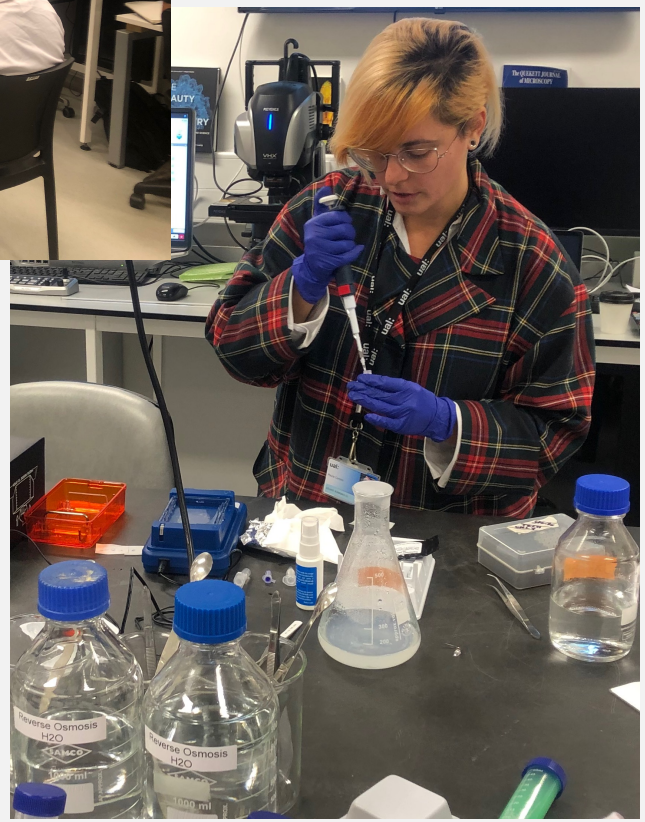
Dr. Paula Corsini

ual:

At CSM

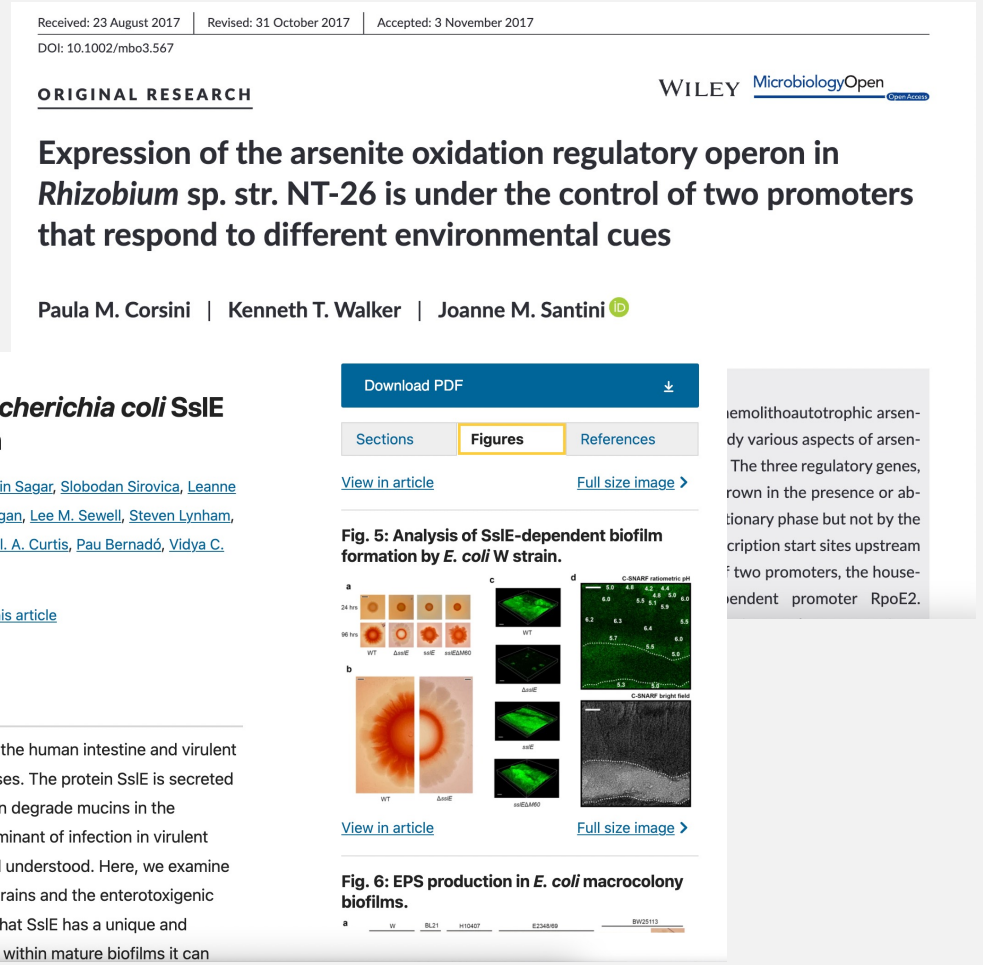
- Science Specialist
- Technical staff
- Theoretical and practical demos
- And many more roles…





As a Researcher

- Microscopist
- Microbiologist
- 10 years in uni + 5 years academic work
- STEM mentor
- Curious but systematic



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DOI: 10.1002/mbo3.567

ORIGINAL RESEARCH

WILEY MicrobiologyOpen

Expression of the arsenite oxidation regulatory operon in *Rhizobium* sp. str. NT-26 is under the control of two promoters that respond to different environmental cues

Paula M. Corsini | Kenneth T. Walker | Joanne M. Santini

Article | Open Access | Published: 25 February 2022

Molecular and cellular insight into *Escherichia coli* SslE and its role during biofilm maturation

Paula M. Corsini, Sunjun Wang, Saima Rehman, Katherine Fenn, Amin Sagar, Slobodan Sirovica, Leanne Cleaver, Charlotte J. C. Edwards-Gayle, Giulia Mastroianni, Ben Dorgan, Lee M. Sewell, Steven Lynham, Dinu Iuga, W. Trent Franks, James Jarvis, Guy H. Carpenter, Michael. A. Curtis, Pau Bernadó, Vidya C. Darbari & James A. Garnett

npj Biofilms and Microbiomes **8**, Article number: 9 (2022) | Cite this article

1860 Accesses | **9** Altmetric | Metrics

Abstract

Escherichia coli is a Gram-negative bacterium that colonises the human intestine and virulent strains can cause severe diarrhoeal and extraintestinal diseases. The protein SslE is secreted by a range of pathogenic and commensal *E. coli* strains. It can degrade mucins in the intestine, promotes biofilm maturation and it is a major determinant of infection in virulent strains, although how it carries out these functions is not well understood. Here, we examine SslE from the commensal *E. coli* Waksman and BL21 (DE3) strains and the enterotoxigenic H10407 and enteropathogenic E2348/69 strains. We reveal that SslE has a unique and dynamic structure in solution and in response to acidification within mature biofilms it can

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Fig. 5: Analysis of SslE-dependent biofilm formation by *E. coli* W strain.

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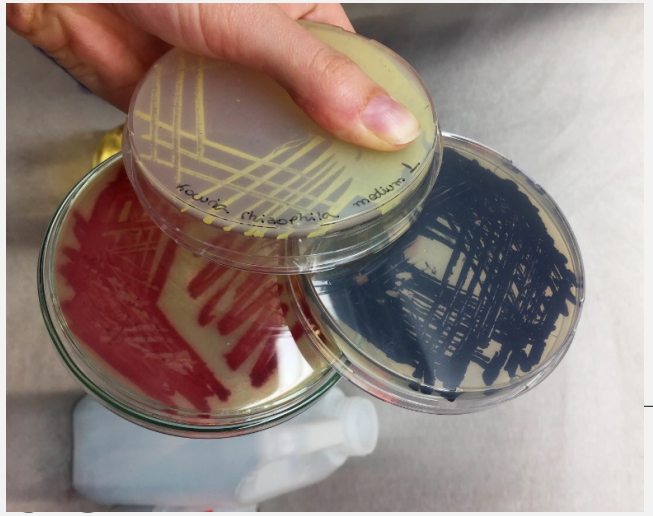
Fig. 6: EPS production in *E. coli* macrocolony biofilms.

...emolithoautotrophic arsen-
...dy various aspects of arsen-
The three regulatory genes,
...rown in the presence or ab-
...tionary phase but not by the
...cription start sites upstream
...two promoters, the house-
...endent promoter RpoE2.

ual:

As Paula and Researcher at CSM

- Work with bacterial and Algae pigments
- Optimize production of new materials
- Try to consolidate partnerships to help students elevate their work
- Offer mentoring on scientific method and sometime contradict what tutors have advised – sorry!
- My main challenge is to communicate science to artists



Pedagogy study

Strengthening teaching and learning in science through using different pedagogies

Unit 4: Using models and modelling techniques

- Using models in science teaching
- Illustrate effectively an abstract concept
- A challenge I face in communicating hard science with creatives

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Strengthening teaching and learning in science through using different pedagogies

Unit 4: Using models and modelling techniques

Figure 2 – Models in Key Stage 3 Science Models in science teaching can mainly be classified into two groups:		
Scientific model (or consensus model)	Teaching model	Analogies are a subset of teaching models
This represents the accepted scientific view of a concept or idea: • it provides a representation or an explanation for a complex process; • it is a consensus view held by the scientific community; • it can be a mathematical or a physical representation or an explanatory theory; • it can help predict the behaviour of systems or events.	This is used to help a learner understand or visualise an idea, a process or a system: • it is a visual or a physical representation; • it is a teaching method to help pupils visualise something abstract or invisible; • it helps explain the abstract idea or invisible structure to the learner.	Analogies are: • based on an object or process very very familiar to pupils; • often stated as 'it's rather like …'; • based on superficial similarities or parallels to the abstract idea; • usually illustrative rather than explanatory; • often 'stories'.

Produced by Department of Education, shared by STEM learning: https://www.stem.org.uk/rxx6v