

Sustainability Activities in Mallorca, Spain as a Model for Community/Tourist Engagement in Tourist Areas in the Asia, Pacific and Oceania Region



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Townsville, Queensland, Australia

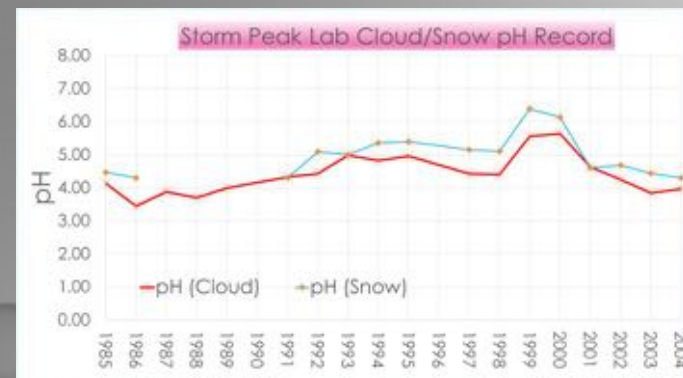
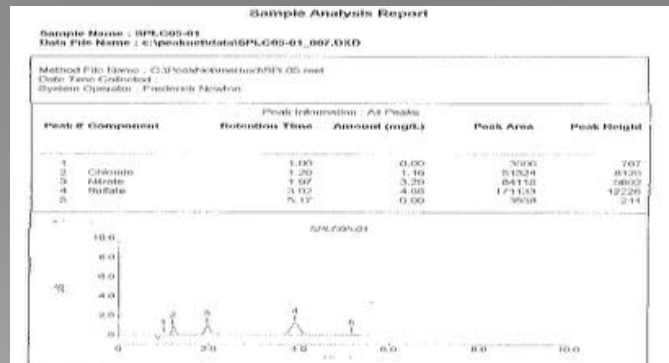
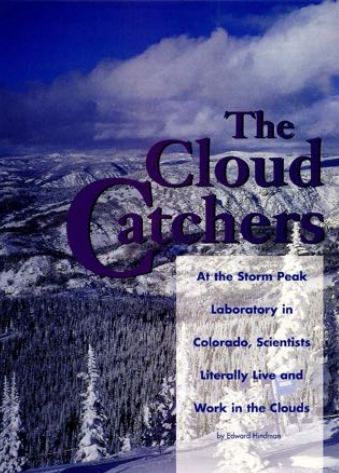
November 26 – 28, 2018

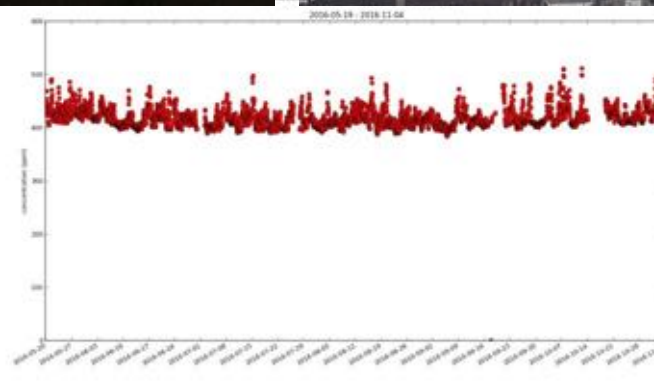
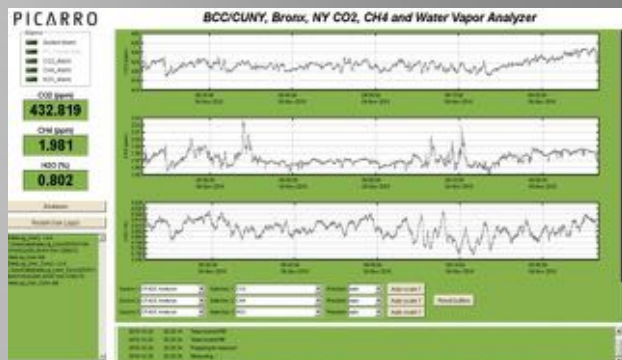
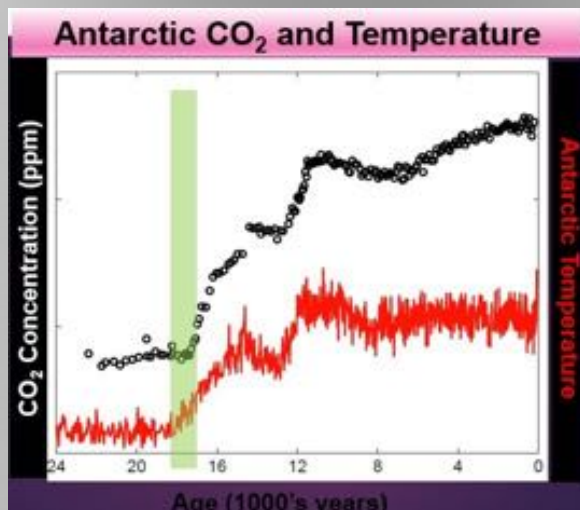
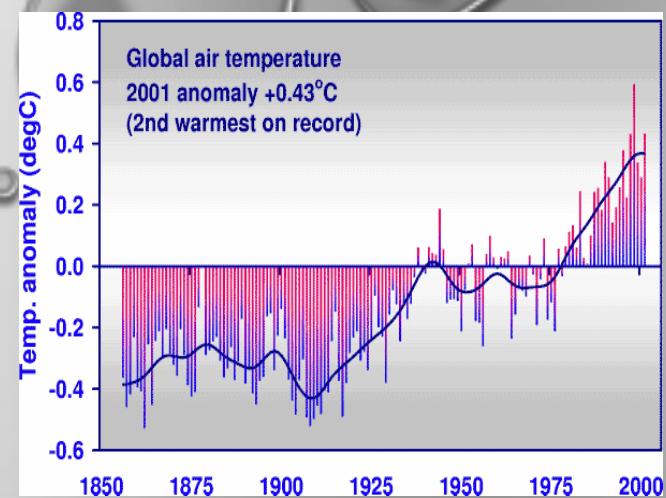












ABSTRACT

Ten Bronx Community College (BCC)/City University of New York (CUNY) students and two faculty members participated in a sustainability focused study abroad program in Palma de Mallorca, Spain during June 2018, through a \$20,000 grant from the Center for International Educational Exchange (CIEE) and through the support of CUNY. The BCC/CUNY team donated and installed a solar powered wireless Davis Vantage Pro 2 Plus weather station at a local high school that sends data to the online Weather Underground network, collected temperature, humidity, UV Radiation, and carbon dioxide data around the island using specially designed backpack weather stations and also collected sea water pH, dissolved oxygen and salinity data at various beach locations on the island. The BCC/CUNY team also conducted STEM workshops for 130 Mallorcan and American Study abroad high school students, on the use hydrogen fuel cells and on weather/air pollution monitoring and assisted Mr. Greg Bruce of Townsville, Australia to conduct Collective Social Learning (CSL) Workshops for 350 Mallorcan high school students on sustainability. These sustainability focused activities are being presented as a model for student/community/tourist engagement in popular tourist destinations in the Asia-Pacific-Oceania region to monitor/catalog the health of the environment and to allow tourists the opportunity to leave valuable footprints in these locations.

CIEE

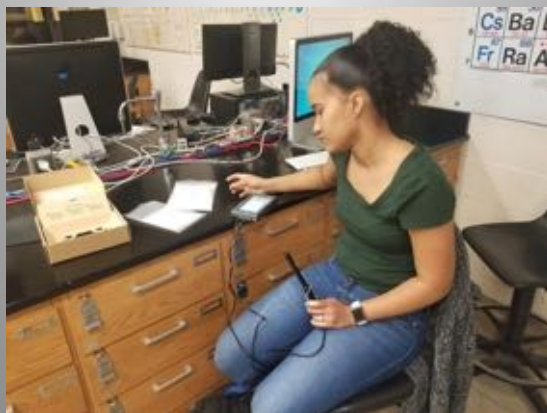
Palma de Mallorca
Study Abroad

Bronx/CUNY YORK/CUNY

CITY COLLEGE/CUNY LEHMAN
COLLEGE/CUNY

CITY OF TOWNSVILLE
Australia

Pre-Departure Training for STEM Activities



Arrival in Mallorca, Spain





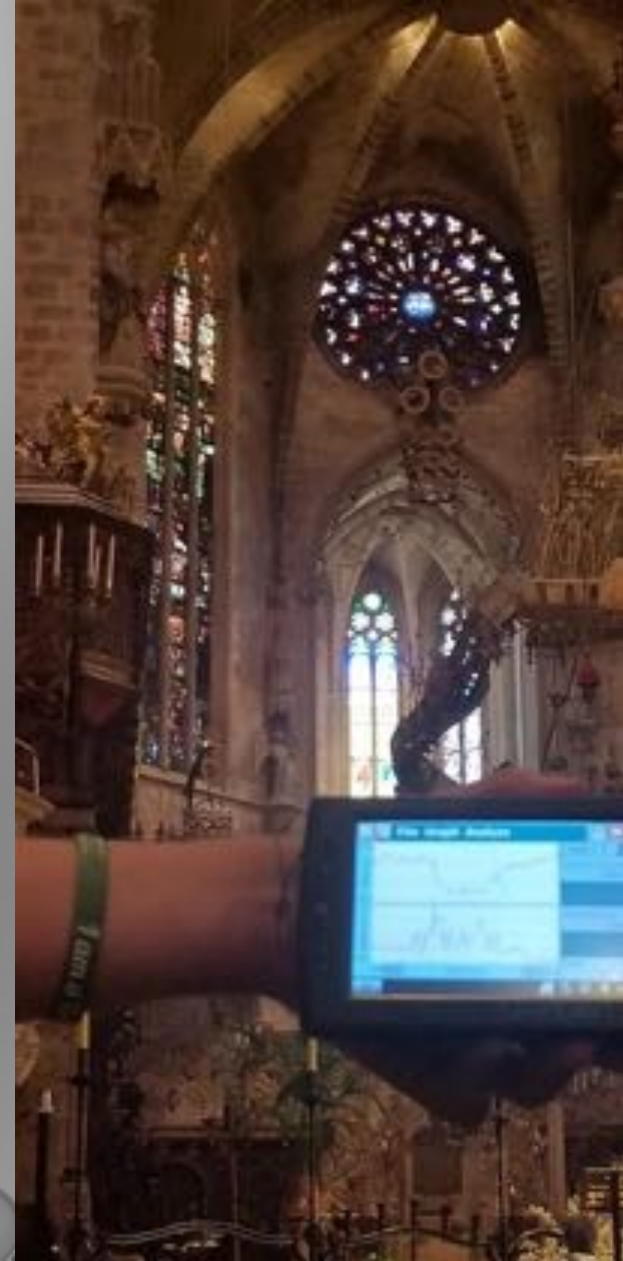
Center for International Educational Exchange (CIEE) University of the Isles Balares (UIB) - Orientation -



Cultural Activities-Bellver Castle Visit



Cultural Activities-Mallorca Cathedral Visit



Cultural Activities-Cooking Paella



Cultural Activities-Visit to a Spanish Fort/Restaurant

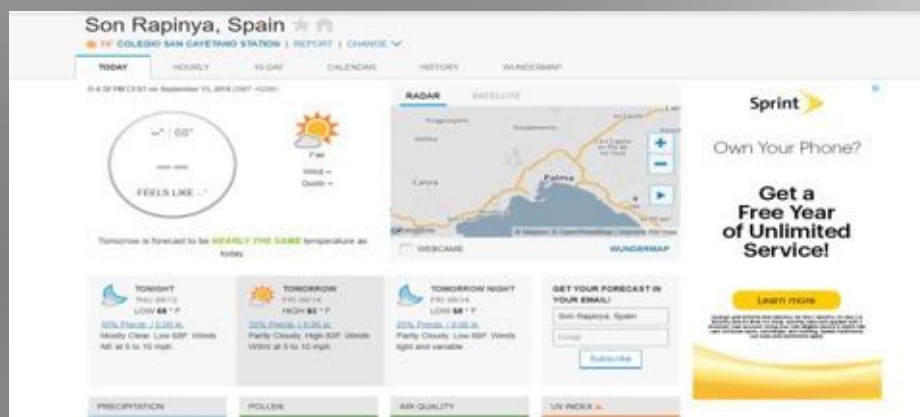




Weather Station Installation Colegioio san Cayetano



Weather Station Installation Colegeio san Cayetano



Great Barrier Reef - Skype Session

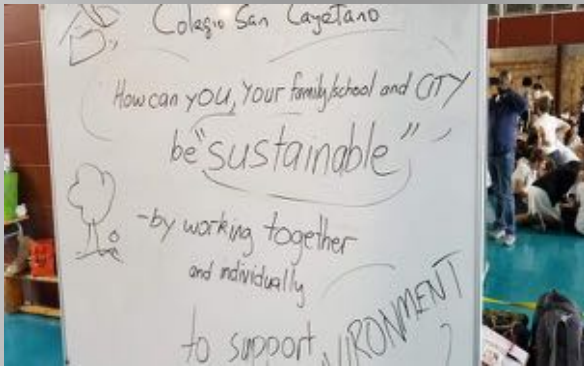


Colegio san Cayetano-STEM Activity



Collective Social Learning Activity

Colegio san Cayetano



[illegible]

Centro Oceanografico de Baleares Research Station



Playa de Soller STEM Activity



Mallorca Sea Bin Project



Backpack Weather Stations Preparation



The New Eco Tourist Essentials





File Sensors



CH 1: UVB Intensity

17.1 mW/m²

Mode:

Time Based

CH 2: Relative Humidity

28.61 %

Rate:

10 samples/s

CH 3: Speed

1.7 m/s

Duration:

60.0 s

GDX: Temperature

20.7 °C

GDX: CO₂ Gas

791 ppm



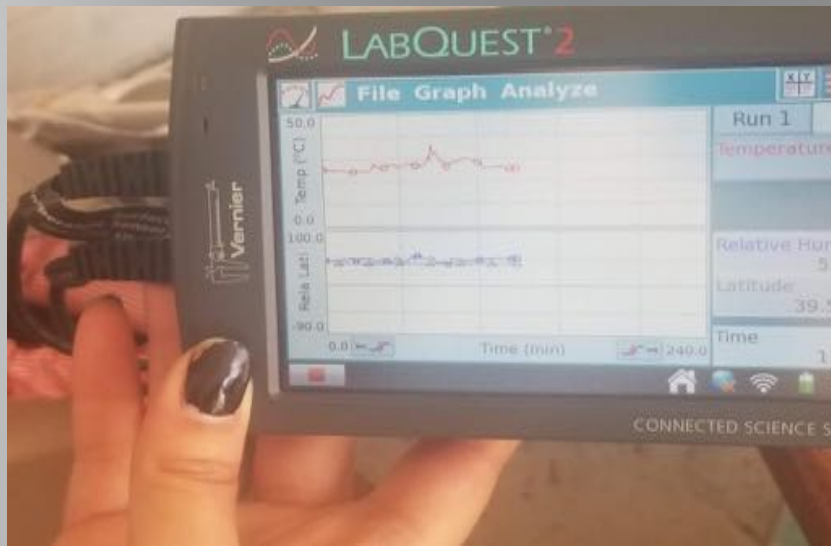
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city





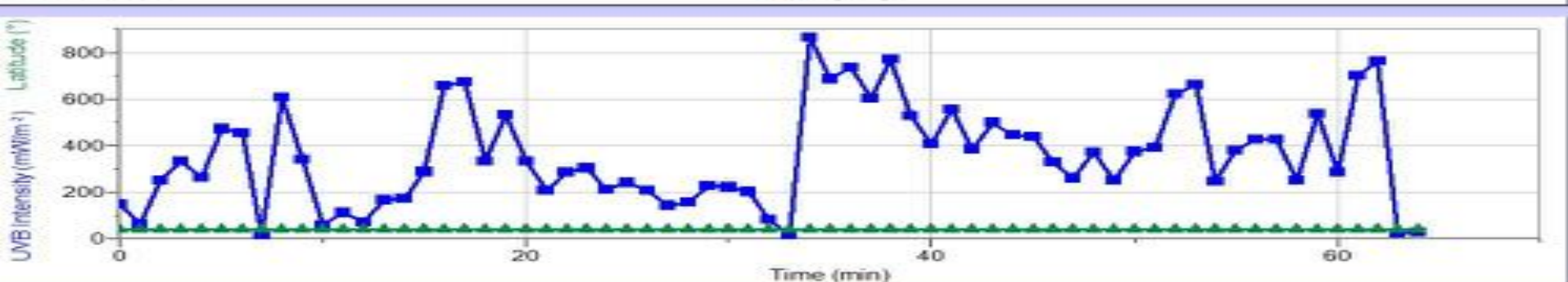
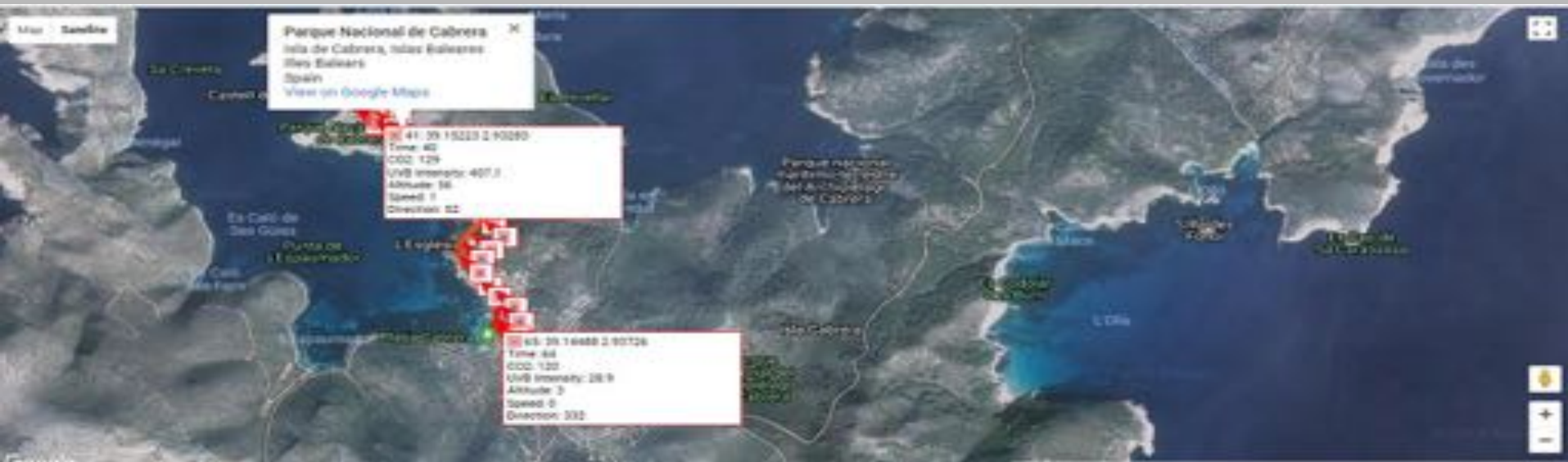


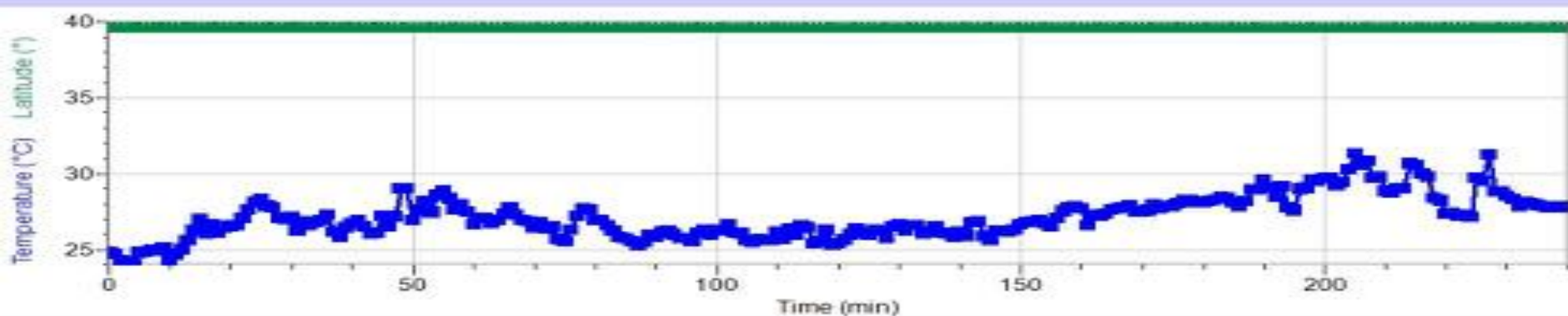
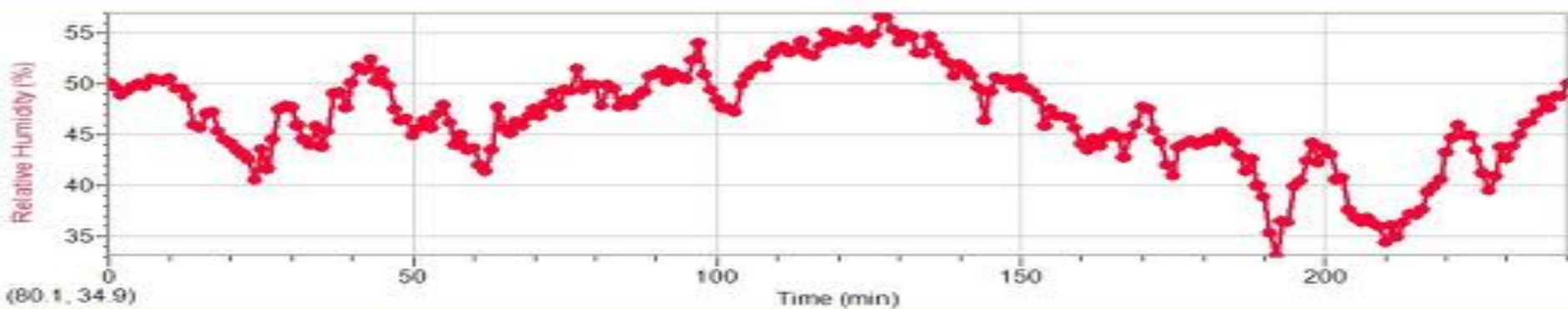
Cabrera Island Visit

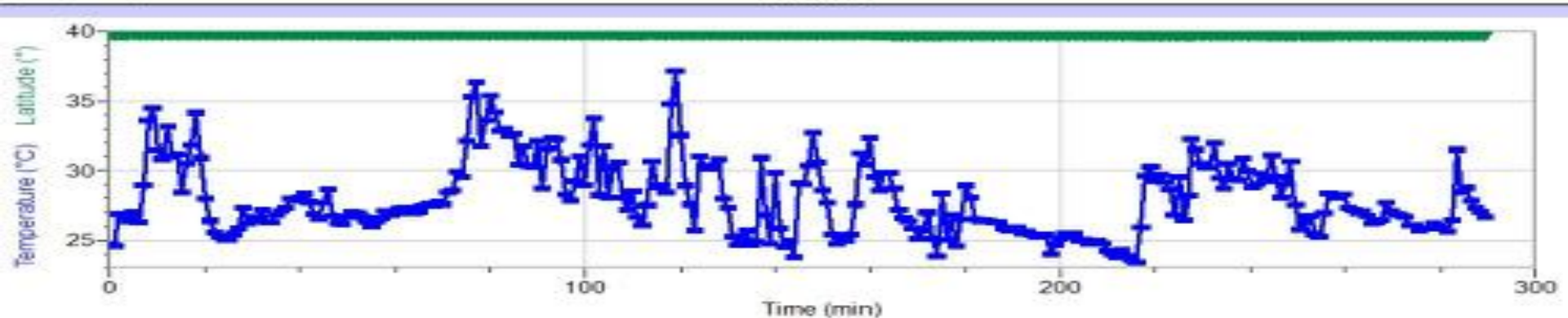
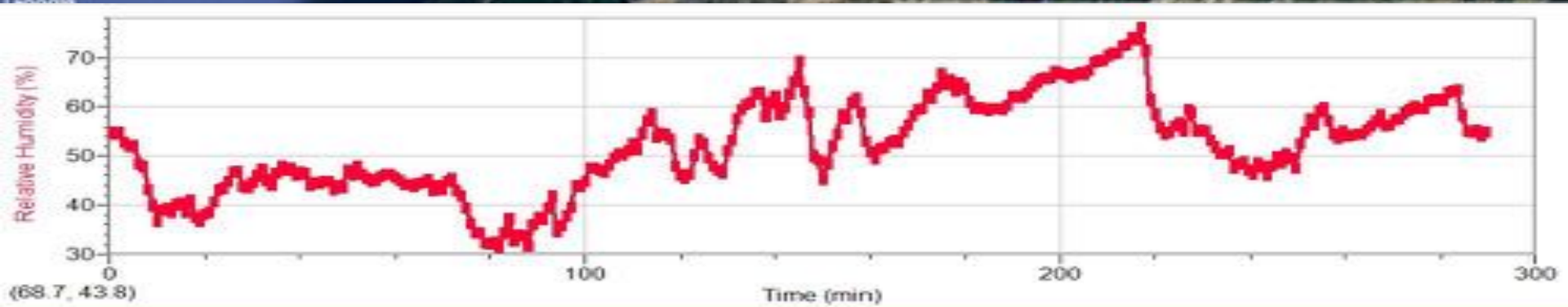
We visited the Cabrera Island (A protected national park) to get measurements from different parts of Palma, and also to observe marine species under the water. My first time on a boat.



UV Radiation & Carbon Dioxide Monitoring







The New Eco Tourists



Acknowledgements

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- ❖ Antonia Ferriol, CIEE Palma de Mallorca Director
- ❖ Beatriz Torres, CIEE Palma de Mallorca Biology Professor
- ❖ Susan Estay, CIEE Palma de Mallorca Coordinator
- ❖ Greg Bruce, Principal Sustainability, City of Townsville, Australia