



RESEARCH PLACEMENTS OUR 25TH YEAR

FIND OUT MORE

SATRO, education charity, are offering summer research placements to Year 12 students in the Surrey Area. Do you want to work with research organisations and companies to research an innovative project related to the application and use of STEAM subjects? Our projects cover the following subject areas:

- SCIENCE
- TECHNOLOGY
- ENGINEERING
- MATHS
- DESIGN
- ENVIRONMENT
- ECONOMICS
- GEOGRAPHY
- PSYCHOLOGY



HOW CARBON CAPTURE CAN PREVENT AN ENVIRONMENTAL DISASTER

Introduction: Every year, humans are responsible for the addition of tens of billions of tons of carbon dioxide into the atmosphere, and in order to avoid any serious threat from the earth's carbon dioxide, it needs to be removed, the most promising technology is called carbon capture which includes artificial carbon capture as well as natural methods such as reforestation. Artificial carbon capture comes in two types, and it is important to compare these two types against each other as well as reforestation and understand where each would be a suitable alternative.

Types of Carbon Capture Project:

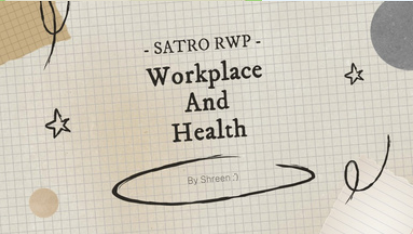
- CC:** Also known as direct air capture, this technology captures carbon dioxide directly from the air, and is a costly method to bring off the ground (DAC). At the moment, this is the most expensive way to capture carbon dioxide, but it has the potential to be scaled up to capture carbon dioxide from the air.
- CCUS:** Also known as carbon capture utilization and storage, this technology captures carbon dioxide from the air, and is a costly method to bring off the ground (DAC). At the moment, this is the most expensive way to capture carbon dioxide, but it has the potential to be scaled up to capture carbon dioxide from the air.

What To Do With Carbon Dioxide: There are two main things to do with carbon dioxide, it can either be stored or used to produce a product. Carbon dioxide can be stored underground, either in depleted oil fields where it is safe and reliable stored in natural formations, or it can be converted deep underground to an area with large amounts of basalt where it can solidify naturally. These have the benefit of having an extremely large capacity for carbon storage, as there are around 65,000 of underground basalt formations in the world. Alternatively, the carbon dioxide can be used to create a product, and a well-known example of this is the production of methanol to support the operation of the carbon capture plant. This can be used as an industrial feedstock, and is a valuable commodity.

The Gigantic Cost of Carbon Capture:

- Money:** The current cost of a ton of carbon dioxide captured is between 100 and 200 (£) which is much more than the 10 (£) which is currently needed to capture a ton of carbon dioxide. However, this cost is expected to decrease as more plants are built and the technology improves.
- Land:** Reforestation is a natural way to capture carbon dioxide, but it is a slow process. DAC and CCUS however to capture 1 million tons of carbon dioxide a year would require 800 km² of land. This is a significant amount of land, but it is a small fraction of the total land area of the world.
- Water:** DAC and CCUS plants need a large amount of water to operate. This is a significant issue in some regions, particularly in arid areas. However, some plants are being designed to use less water, and there are also ways to recycle water used in the process.

Conclusion: Both DAC and CCUS are needed to help reduce carbon dioxide emissions and to prevent climate change. However, it is important to understand the costs and challenges of these technologies, and to ensure that they are used in a way that is sustainable and does not create other environmental problems.



WHAT DOES IT INVOLVE ?

- Companies or research organisations set the projects and students research the topic.
- Virtual Sessions will support your research.
- A site visit may be possible on some projects.
- Accessible to all as the scheme is free to join.
- Flexibility through the summer from 1st July -18th August. We ask for your available dates in advance.
- Projects usually run over a 2/3 week period.
- Full support from SATRO over your placement.
- Online resources available via google classroom.
- Virtual interview practice available.
- Final virtual presentation
- In person celebration at Surrey Research Park in the Autumn

HOW TO APPLY?

CLICK [HERE](#) TO APPLY AND COMPLETE THE APPLICATION FORM BY 20TH APRIL

Any questions please email satro-rwp@satro.org.uk

Please note this is not a standard WEX opportunity

2022 COMPANIES INVOLVED IN RWP

Air Products	Surrey Ion Beam Centre
Allianz	Surrey Wildlife Trust
ANS	Synamedia
BAM Construction	Thakeham
COINS	TrueInviso
Legal & General	University Cambridge Student

SATRO RWP 2023



WHO CAN APPLY?

All Surrey based Year 12 students studying an A level or Level 3 Btec in Science, Technology, Engineering, Psychology, Economics, Geography, Design, Maths or related subjects.

The application needs to be supported by a teacher but there are no barriers to entry. Link to the application form is on the front page.

This is an opportunity for students to:

- Apply for Crest Gold Award.
- Extend your personal Statement
- Gain key employability Skills
- Learn about research in the workplace
- Create industry links

2022 STUDENT FEEDBACK:

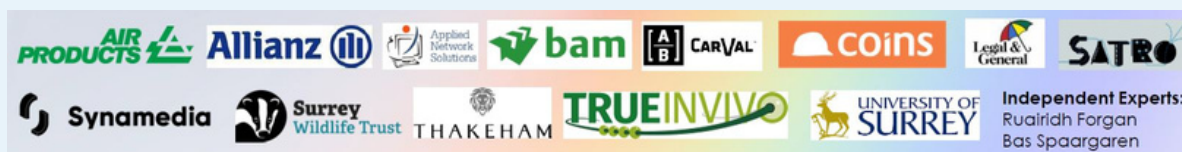
'Some of the skills I gained included research, presentation, organisation and communication skills.'

'Through this project, I've become more invested in climate change and genuinely enjoy finding out more about its solutions which I hope I can somehow incorporate into my degree or future career.'



2022 PROVIDERS & FEEDBACK:

'The work the student did was genuinely valuable to our organisation in providing an insight into a new demographic and audience.'



CONTACT US AT:

SATRO-RWP@SATRO.ORG.UK

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