



for
Sustainable Development
(#VIP4SD)

1972



1987



2000



2012



2015

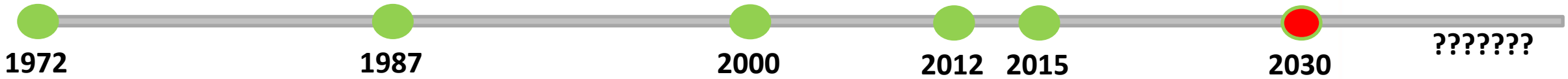


2030

???????



The **SDGs** are part of Resolution 70/1 of the United Nations General Assembly: "Transforming our World: the **2030 Agenda** for Sustainable Development". That has been shortened to "**2030 Agenda**"

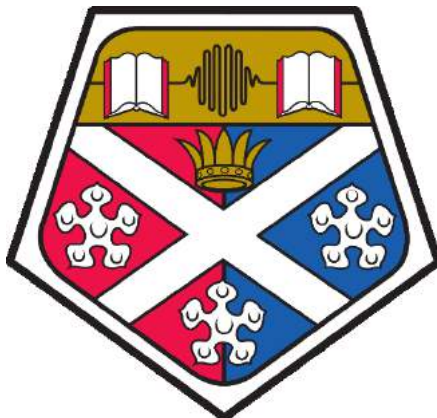


SUSTAINABLE DEVELOPMENT GOALS

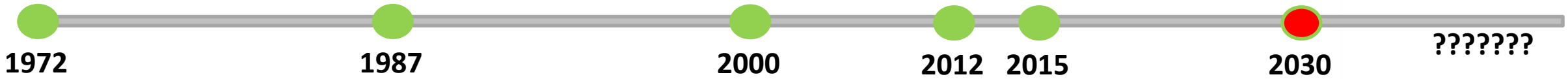


“SDGs - Agenda 2030”

“a bold new global agenda to end poverty by 2030 and pursue a sustainable future for all”.



“To form the best state at the beginning, men of like interests and temper, by a social cohesion and friendship, life in society, and the pursuit of knowledge, the liberal arts and of domestic industry” –

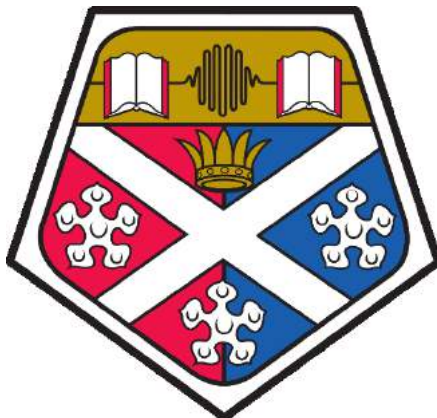


SUSTAINABLE DEVELOPMENT GOALS



“SDGs - Agenda 2030”

“a bold new global agenda to end poverty by 2030 and pursue a sustainable future for all”.



*“...from these small beginnings,
this institution may become a
“the place of useful learning”...
seminary of Sound Religion;
Useful Learning; and Liberality
of Sentiment.”*

WHAT STUDENTS WANT



70% would like to see sustainable development actively incorporated and promoted through all courses



81% say sustainable development is something they would like to learn more about



61% would accept a salary 15% lower than average to work in a company with a good social and environmental record



25% say they've never heard of the UN Sustainable Development Goals

“All of our hopes for a better world rest on young people”

- Secretary-General, António Guterres’

BE PART OF IT



YOUTH2030
WORKING WITH AND FOR YOUNG PEOPLE

#Youth2030

www.un.org/youthenvoy/

#YOUTH2030



“Taking the SDGs from the United Nations into countries and leveraging the **potential of young people** to get them on the agenda is very important.” – *Amina J. Mohammed, the United Nation’s Deputy Secretary General*

“**All of our hopes for a better world rest on young people**”

- *Secretary-General, António Guterres*



“Universities can harness their unique access to large concentrations of young people to directly contribute to all the SDGs” – Monash University (SDSN Member), ‘Getting Started with SDGs’

Creative

Energetic

Optimistic

Global

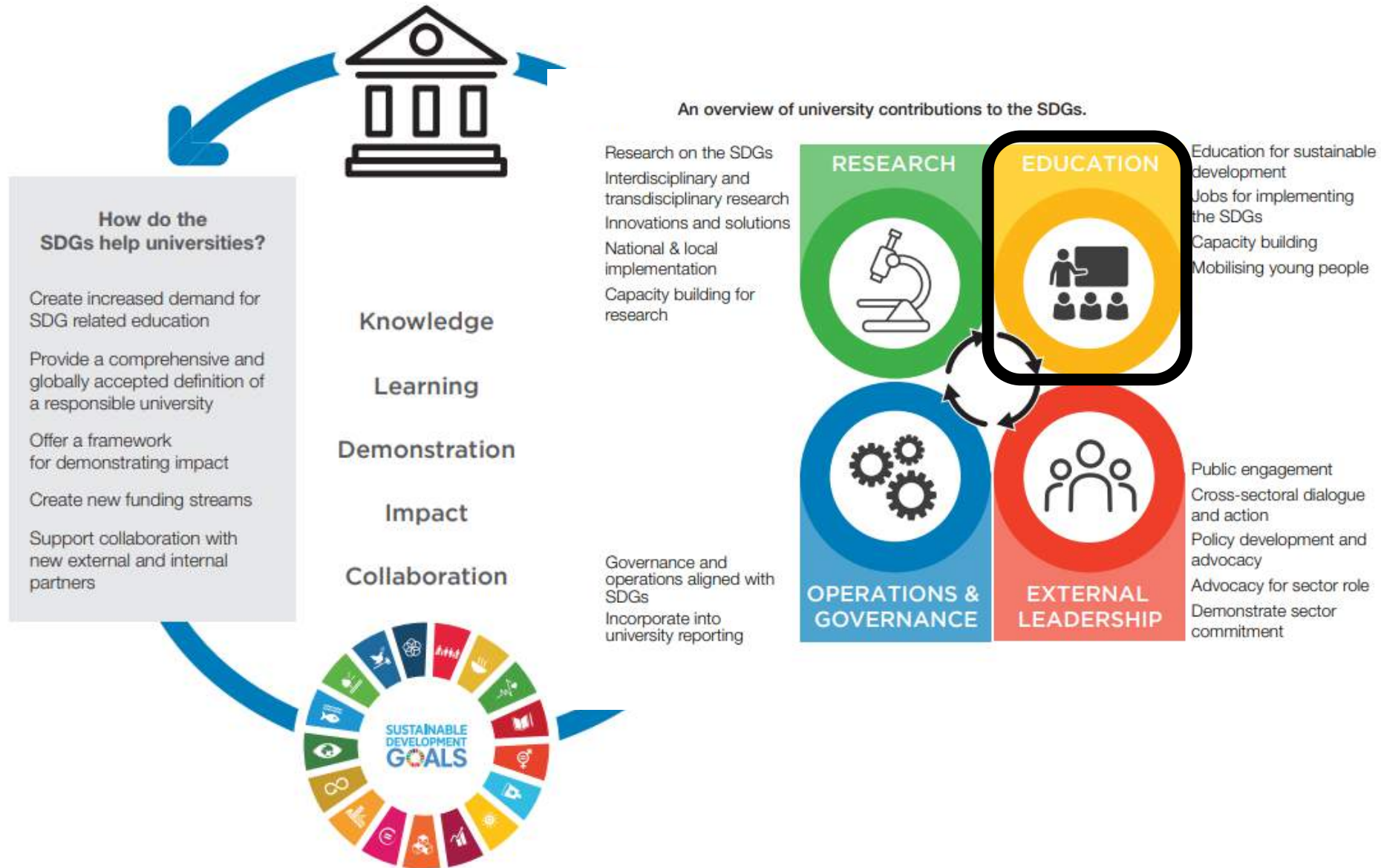
Idealistic

*Meaningful
Contributions*

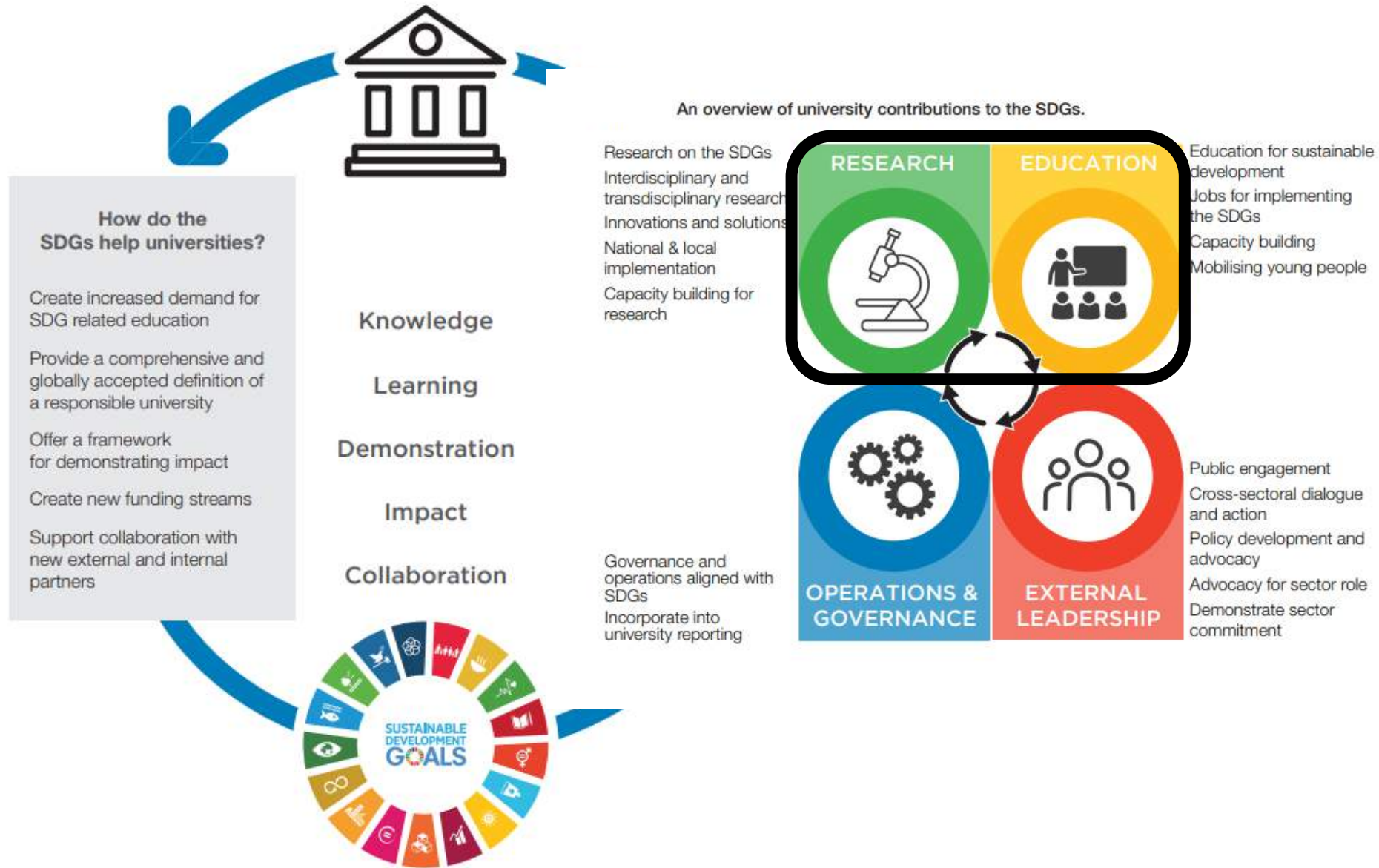


Challenging

Case for University Engagement in SDGs



Case for University Engagement in SDGs



Education for Sustainable Development



“Education for Sustainable Development (**ESD**) is an **interdisciplinary approach to learning** that covers the integrated social, economic and environmental dimensions of the formal and informal curriculum.”

“**ESD** assists graduates who wish to develop the skills, knowledge and experience to contribute to an environmentally and ethically responsible society, and pursue a career that reflects those values”

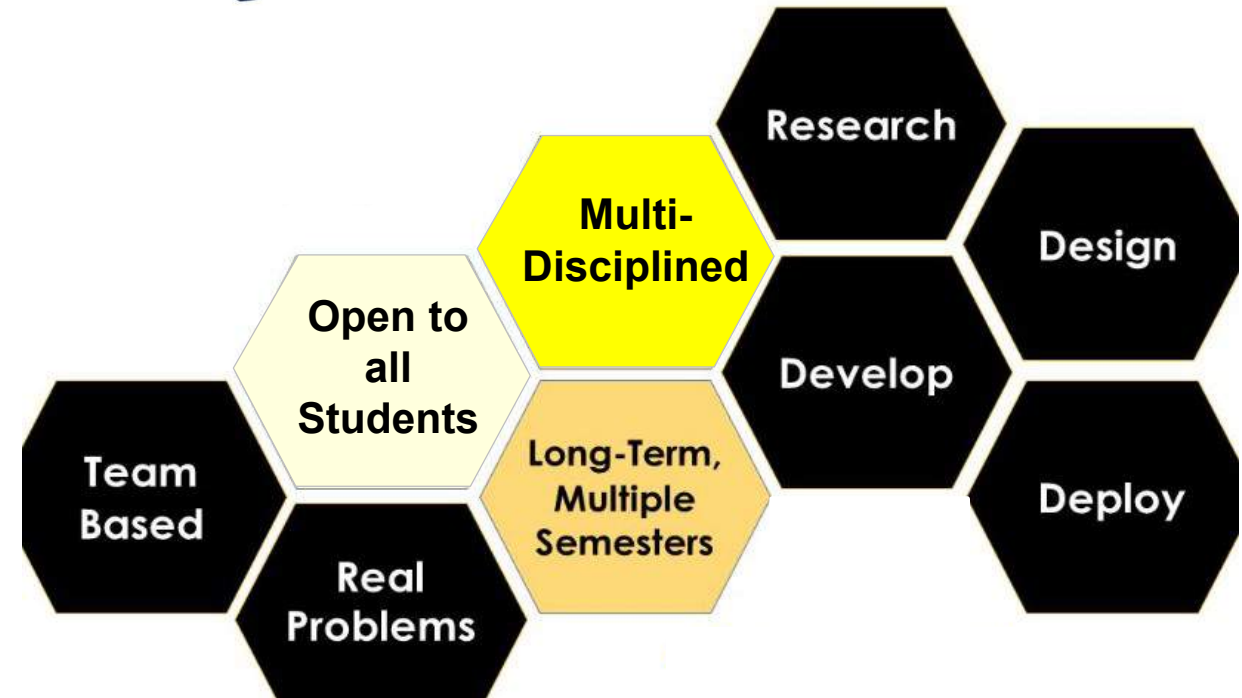
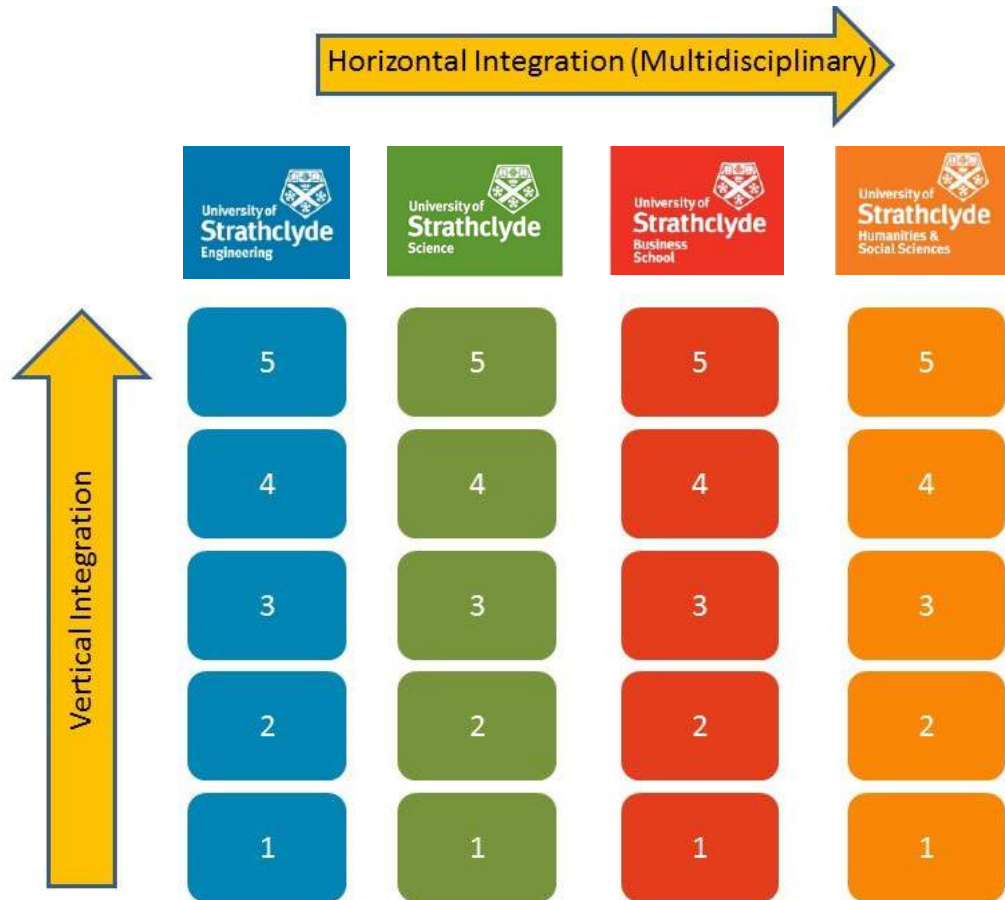
OKAY, BUT HOW?





for
Sustainable Development
(#VIP4SD)

VIP Vertically Integrated Projects



The Consortium: 35 Members So Far....



United States (24)

- Arizona State University
- Boise State University
- Colorado State University
- Drexel University
- Florida International University ^{URM}
- **Georgia Tech** ^{AAU,1}
- Howard University ^{URM}
- Iowa State University ^{AAU}
- **Morehouse College** ^{URM,1}
- New York University ^{AAU}
- Notre Dame
- Polytechnic Univ of Puerto Rico ^{URM}
- Purdue University ^{AAU,1}
- Rice University ^{AAU}
- Stony Brook University ^{AAU}
- Texas A&M University ^{AAU,URM,1}
- UC Davis ^{AAU,URM}
- University of Delaware

• University of Georgia

- University of Hawaii ^{URM}
- University of Michigan ^{AAU,1}
- University of Washington ^{AAU}
- VA Commonwealth University
- Virginia Tech

International (11)

- Inha University (Korea)
- Malmö University (Sweden)
- Natn'l Dong Hwa University (Taiwan)
- Natn'l Ilan University (Taiwan)
- Riga Technical University (Latvia)
- Universidad del Norte (Colombia)
- Universidad ICESI (Colombia)
- Universidad Mayor (Chile)
- Univ. of New South Wales (Australia)
- University of Pretoria (South Africa)
- University of Strathclyde ¹ (Scotland)

Pending (5)

- **Georgia State University**
- NCA&T University ^{URM}
- Reykjavik University
- Tuskegee University ^{URM}
- UNICAMP
- Universidad de Chile

LEGEND:

^{AAU}: Member Institution (9)

^{URM}: Underrepresented
Minority Institution (7)

¹: Program in place prior to
Consortium establishment (5)

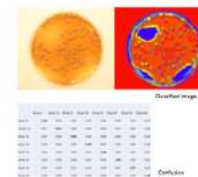
**Bold: State of Georgia
Institutions (3)**



for Sustainable Development

Image Classification for Drug Discovery

- Using the information contained in the masks created previously, images can be classified.
- Classification allows us to assign the features of an image to a specific 'class'.
- 'Confusion matrices' allow us to assess how well a classifier performs.
- If an image does not fit into any 'class' then it is potentially something that has not been seen before.



Text Lab

- "An application for the close reading and scholarly analysis of deeply tagged texts."
- Also allows you to count the instances of words that appear.
- Creates a cloud of the most common words in a text.
- Provides the statistical likelihood each word will appear.

she moor
i we lieutenant
handkerchief our
willow it honest do her
oh think wife general signior
heaven thy devil soul alas
ANNA LEE, 1600-1640, renaissance

Enterprise VIP

- A University-wide initiative to support future entrepreneurs and provide a learning platform for Strathclyde students.
- Tier 1 - Project Springboard
A one-stop shop for all queries
- Tier 2 - Project Inspire
Planning Events to Inspire Activity
- Tier 3 - Project Engage
Business Analysis for Start-Ups
- Tier 4 - Project 'A-Team'
Providing Expert Advice

Building and supporting Entrepreneurs in the Strathclyde Community
www.strath.ac.uk/vipprojects

Sustainable



TRANSFORMING THE WORLD:
THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR DEVELOPMENT



VIP@STRATH Water and Sanitation



VIP - Business Plan Development for a Small Wind Turbine Company in Somali Region of Ethiopia



ROVER VIP: Wind Turbine Inspection Robots

The inspection of wind turbine blades poses great risk to human technicians. UAVs have limited payload and resistance to weather.

Many design concepts were generated, culminating in the design of a tower-climbing robot that inspects a down-oriented blade.

Completion and improvement of this robot is an ongoing team effort.



Mobilelands



Theatre and performance VIP



Existing VIP4SD Teams – ~ 200 students



- Enterprise VIP
- ROVER
- STEM Education & Pub Engagement
- Sustainable Energy for Development
- Drug Discovery
- TextLab
- Water and Sanitation Hygiene (WASH)



1101 Students

University of Strathclyde Glasgow

VIP Homepage
VIP Staff Information
Enterprise VIP
RObotic Vehicles for Education & Research (ROVER)
STEM Education & Public Engagement
Sustainable Energy For Development
Drug Discovery
TextLab
Water and Sanitation Hygiene (WASH)
Strathclyde Analytical Institute of Law

Search this site

Home Study with us Work with us Why Strathclyde

Vertically Integrated Projects (VIP)

Information for Students

Are you interested in applying what you've learnt in the classroom to original research and development projects? Would you like to be a part of a multi-disciplinary team working with undergraduate and postgraduate students from all years and staff from across the University? Do you want to learn new knowledge and skills that will make you stand out from the crowd? If so VIP@Strath would like to hear from you! University of Strathclyde is running a programme of classes called Vertically Integrated Projects – VIP@Strath. These projects give students from first year through to postgraduate level the opportunity to work with staff in multi-disciplinary teams on cutting-edge research and development projects.

By taking part in a VIP project you will be able to:

- Learn and practice many different professional skills.
- Make substantial technical contributions to a project.
- Experience many different roles on a large design team.
- Interact and receive support from more senior students and, in some instances, receive mentoring from PhD students involved in the project.
- Contribute to the completion of large-scale design projects that are of significant benefit to the research programmes of staff members.

If you would like to join the VIP Team please contact the relevant academic lead.

This year's projects include:

1 NO POVERTY Enterprise VIP	2 ZERO HUNGER Water and Sanitation	3 GOOD HEALTH AND WELL-BEING Drug Discovery
4 QUALITY EDUCATION TextLab STEM Education & Public	5 GENDER EQUALITY TextLab	6 CLEAN WATER AND SANITATION Water and Sanitation
7 AFFORDABLE AND CLEAN ENERGY Water and Sanitation Sustainable Energy For Development	8 DECENT WORK AND ECONOMIC GROWTH Enterprise VIP	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE ROVER
10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	

Strathclyde Analytical

VIP Projects

VIP
@STRATH

[Enterprise VIP](#)
[ROVER](#)
[Drug Discovery](#)
[STEM Education & Public Engagement](#)
[Sustainable Energy for Development](#)
[Systems Biology Of Polarized Growth](#)
[TextLab](#)
[Water and Sanitation Hygiene \(WASH\)](#)

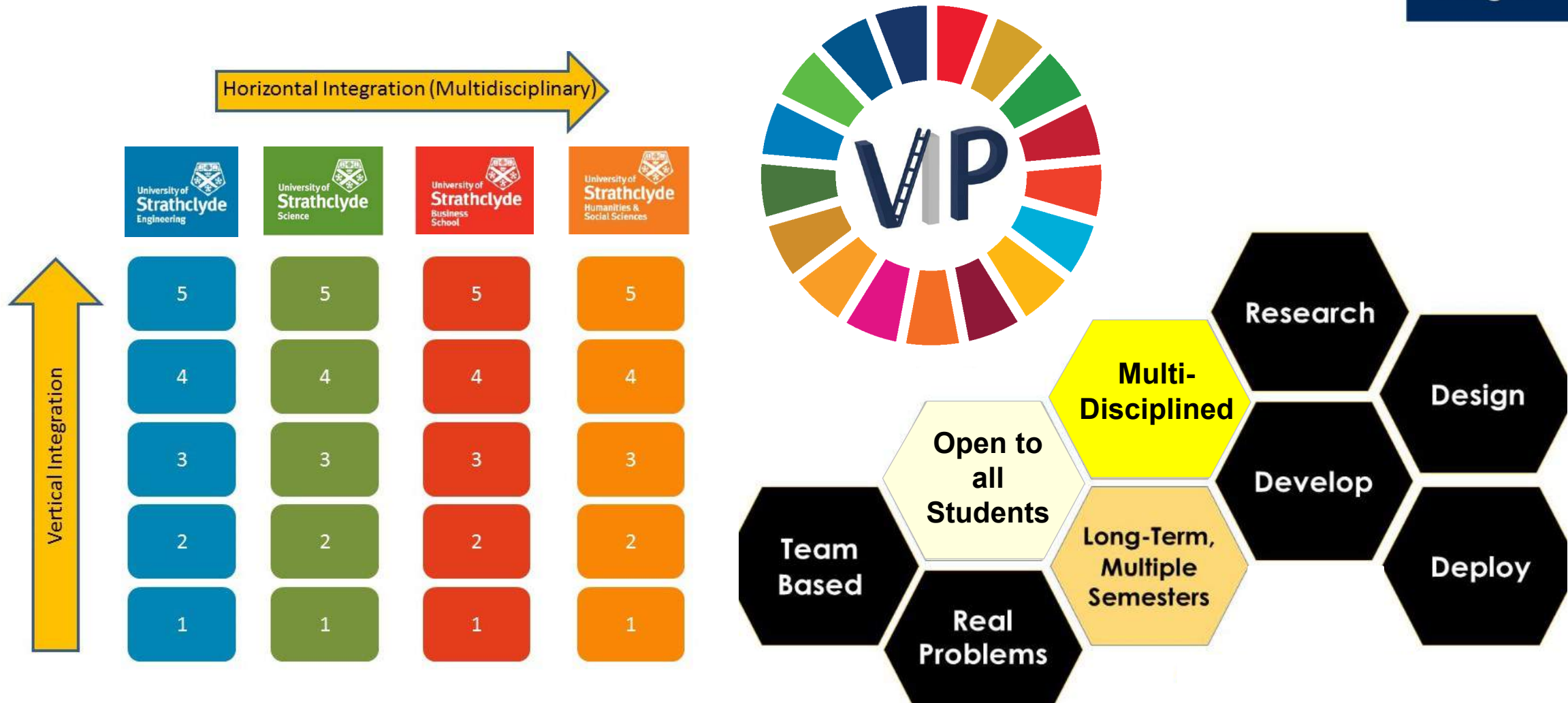
Sustainable Development Goals

Read about SDG's on the UN Sustainable Development Goals [website](#)

More about each goal

[Goal 1: No Poverty](#)
[Goal 2: Zero Hunger](#)
[Goal 3: Good Health and Well-Being](#)
[Goal 4: Quality Education](#)
[Goal 5: Gender Equality](#)
[Goal 6: Clean Water and Sanitation](#)
[Goal 7: Affordable and Clean Energy](#)
[Goal 8: Decent Work and Economic Growth](#)
[Goal 9: Industry, Innovation and Infrastructure](#)
[Goal 10: Reduced Inequalities](#)
[Goal 11: Sustainable Cities and Communities](#)
[Goal 12: Responsible Consumption and Production](#)
[Goal 13: Climate Action](#)
[Goal 14: Life Below Water](#)
[Goal 15: Life on Land](#)
[Goal 16: Peace, Justice and Strong Institutions](#)

VIP Vertically Integrated Projects





Sustainable Energy for Development (SE4D)



SE4D



SUSTAINABLE DEVELOPMENT GOAL 7

Ensure access to affordable, reliable, sustainable and modern energy for all



“Energy is the **golden thread** that connects economic growth, increased social equity, and an environment that allows the world to thrive.”

– Former UN Secretary-General Ban Ki-moon



SUSTAINABLE DEVELOPMENT GOAL 7

Ensure access to affordable, reliable, sustainable and modern energy for all



Global problem in need of effective
and innovative engineering
solutions...



Snell's Law of
Refraction

SUSTAINABLE DEVELOPMENT GOAL 7

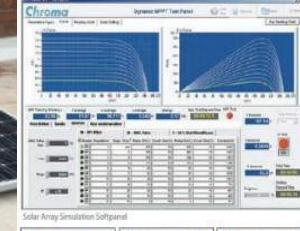
Ensure access to affordable, reliable, sustainable and modern energy for all



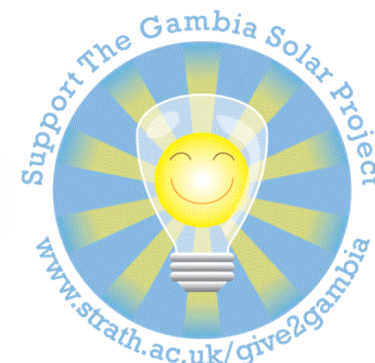
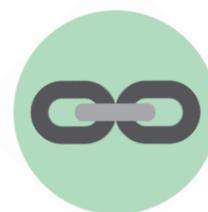
What other innovative lighting and energy access solutions can YOU think of?

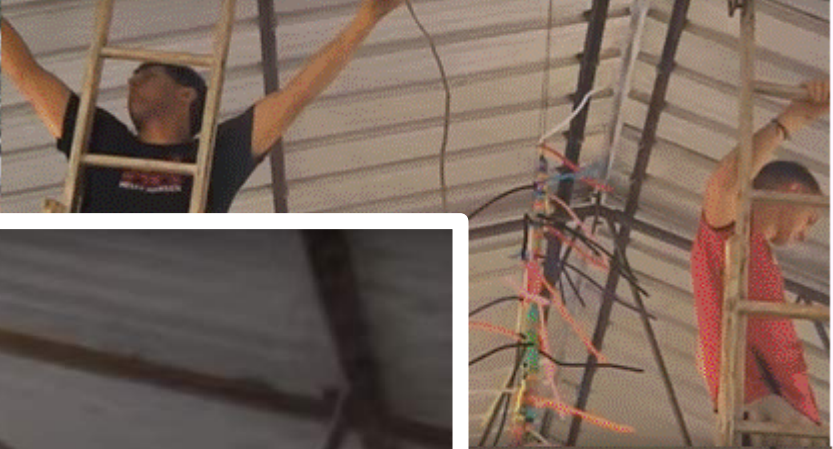


Join Sustainable Energy for Development VIP and
'Make a Difference – Make it Count'



SE4D





The Gambia Project

Vertically Integrated Projects

While the Gambia Project has been responsible for 8 solar PV projects over the last decade, in 2012 the project started connecting students to work on real world problems through the Vertically Integrated Projects programme, or VIP.

VIP has linked several different academic disciplines together as a team: Electrical Engineering, Computer Science,

Design Manufacturing Engineering, and Business and Economics.

The VIP programme provides an opportunity for students to work over two academic years on a single project. By the second year they are mentoring the younger students and innovating technological solutions for places like the Gambia.



Bold, Ambitious, Innovative and Collaborative

HEADMASTER'S OFFICE



PhD

EME

DMEM

SBS

CES

SBS

PhD

SEfD - eCook

SE4D



4 million deaths directly resulting from this lack of electricity access

eCook Tanzania Country Report

Opportunities and Challenges in Tanzania

August 2018 Working Paper



Main authors: S Batchelor, J Leary, S. Sago, A. Minja, E. Sawe, J. Shuma, N Scott

Associate authors: M Leach, E Brown
Innovate Project 132724

Implemented by:



Funded by:



SEfD – mini-grid design



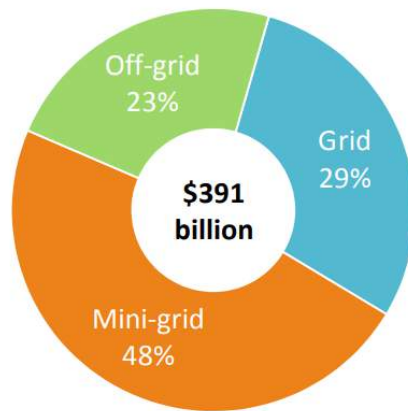
6%

of new electricity connections worldwide between 2012 and 2016 were provided by off-grid and mini-grid renewable energy systems

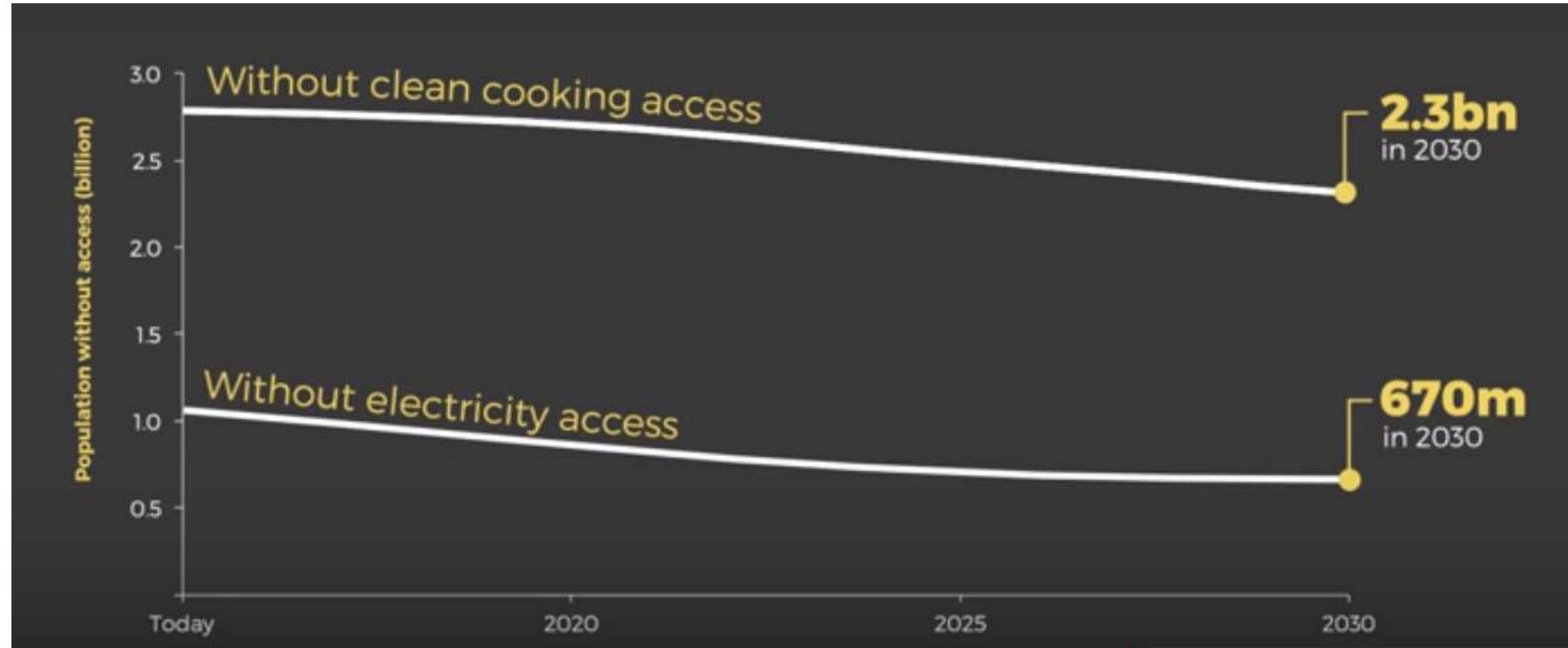
SE4D



Investment



Off target...

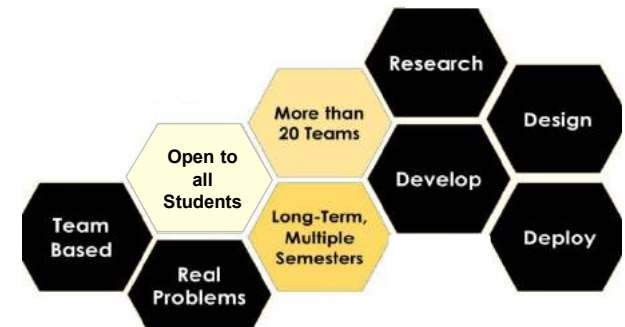


Competencies and skills for 'sustainable development'

- Systems thinking competency
- Anticipatory competency
- Normative competency
- Strategic competency
- Collaboration competency
- Critical thinking competency
- Self-awareness competency
- Integrated problem-solving competency



Education
2030

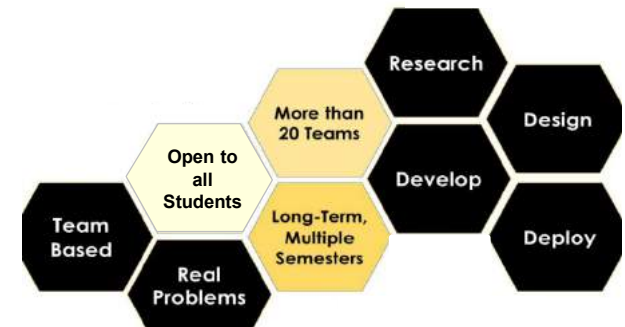


Competencies and skills for 'graduate employment'

- Systems thinking competency
- Anticipatory competency
- Normative competency
- Strategic competency
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Education
2030



Sustainable Energy for Development VIP

SE4D



Student Experience

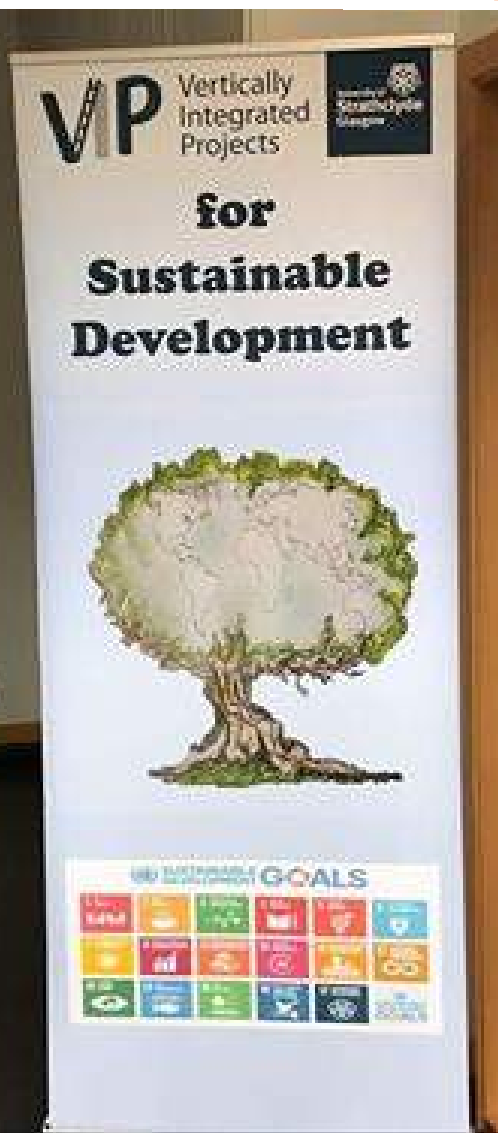
Research

Impact





for Sustainable Development Conference 2018



17 PARTNERSHIPS FOR THE GOALS



for

Sustainable Development



**SUSTAINABLE
DEVELOPMENT** **GOALS**

scott.strachan@strath.ac.uk

Our Vision

Institutionalise & Internationalise



The Consortium: 35 Members So Far....



United States (24)

- Arizona State University
- Boise State University
- Colorado State University
- Drexel University
- Florida International University ^{URM}
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- Purdue University ^{AAU,1}
- Rice University ^{AAU}
- Stony Brook University ^{AAU}
- Texas A&M University ^{AAU,URM,1}
- UC Davis ^{AAU,URM}
- University of Delaware

• University of Georgia

- University of Hawaii ^{URM}
- University of Michigan ^{AAU,1}
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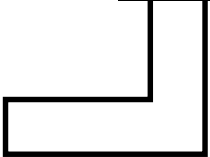
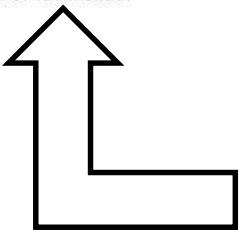
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**Bold: State of Georgia
Institutions (3)**

Our Vision

Institutionalise & Internationalise





VIP Vertically Integrated Projects
for Sustainable Development Conference 2019

Come along and see the inspirational research of Strathclyde students tackling the UN Sustainable Development Goals

 Wednesday 27th March 2019
12:00pm - 4:30pm

 Technology and Innovation Centre,
University of Strathclyde, 99 George Street,
G1 1RD

Click here to register:  Follow updates: 

 **SUSTAINABLE DEVELOPMENT GOALS**

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
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Week 11
Thursday
27th March


members



Engaging with the United Nations' Sustainable Development Goals

 **Wednesday, 1st May 2019, 1:00 pm - 5:00 pm**

Registration from 12:30 pm

 **Venue: The Technology and Innovation Centre**

[Register Now](#)

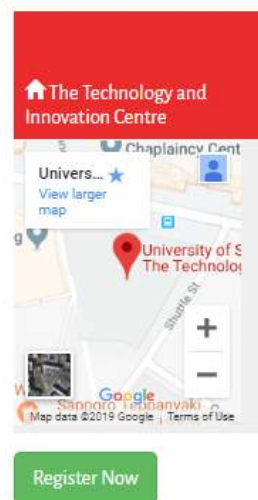
The aim of this event is to raise awareness of the United Nations' Sustainable Development Goals within Strathclyde and inspire staff and students to become active in this area. The event will start with a keynote speaker who will present an overview of the SDGs.

This will lead into presentations on Strathclyde's recent, existing and proposed contributions, demonstrating our track record in SDG related activity across the strands of Research, Teaching and Learning, Knowledge Exchange, Outreach and Operations (including Estates).

A workshop discussion will focus on how Strathclyde can support staff and students to get more involved with SDGs through existing and new initiatives, and encourage collaboration with stakeholders already active in this area.

Who should attend?

Benefits of attending



[Register Now](#)

Engage with Strathclyde is a week

Thank you!