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# Global Space Design Challenge Summer Programme 2020

Imperial College London

Saturday 11<sup>th</sup> July - Wednesday 22<sup>nd</sup> July 2020





Impress your peers and enhance your University Application.

Be the president of your own company, a lead engineer or space scientist at this prestigious STEM event

Are you interested joining a 'Company' as part of An Industrial Simulation?



Space settlements are designed by engineers with the help of doctors, lawyers, scientists and engineers. If you want to be an engineer, space scientist, automation expert or business manager, this course is for you.

This is an intensive residential summer programme for the highest achieving students throughout the world. It offers you the chance to learn from academics and business leaders at a world class university, culminating in a two-day challenge patterned after the UK Space Design Competition (UKSDC) and the International Space Settlement Design Competition (ISSDC).

Eight students selected from the winning company of the challenge, will be invited to attend either the USDC national finals or the ISSDC held at NASA's Kennedy Space Center, Florida\*



Get ahead of your peers

Stand out from the crowd

Gain a competitive edge with your University Application

Improve your written and verbal presentation skills

Find hidden talents







## As a participant you will:

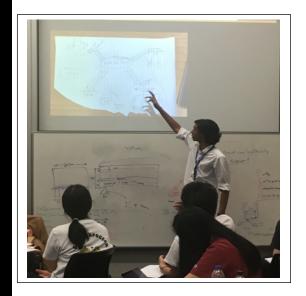
- Be mentored by world-class academics and industry experts
- Take your subject knowledge to the next level through an intensive academic programme of lectures, seminars and practical sessions.
- Access professional advice and guidance with University applications, including customized tours and lectures at both the Universities of Oxford and Cambridge.
- Work as a team design a settlement in space, and experience the joys and challenges of working in a large industrial company
- Enjoy meeting like minded students and make life-long friends. In spite of the intensive study programme, there will be opportunities to enjoy social activities and some of the attractions that London has to offer
- Receive a valuable course certificate of achievement and competition medal.

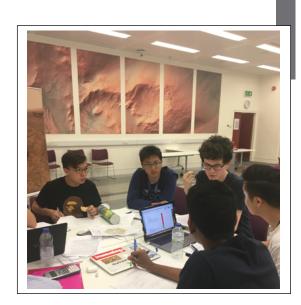
Design a space settlement as an aerospace engineer, designer, medical expert, or robotics designer. Learn from Industry experts, design a futuristic space settlement as part of a management team.



### THE CHALLENGE

The challenge is modeled on the work of the UK Space Design Competition which has been successfully running educational events in the UK for the past 12 years., founded by Dr Randall S. Perry. Dr Perry is a Senior Research Investigator, Imperial College London, and Honorary Chairman of the Space Science Engineering Foundation, a UK educational charity.





Start times	Saturday 11 <sup>th</sup> July	Sunday 12 <sup>th</sup> July	Monday 13 <sup>th</sup> July	Tuesday 14 <sup>th</sup> July	Wednesday 15 <sup>th</sup> July	
07:00					BREAKFAST	
07:30		DDEAKEAGE	DDEALEACT	DDE AVEA OT	DEPART FOR OXFORD	
08:00 09:00		BREAKFAST	BREAKFAST	BREAKFAST		
03.00		Introduction to	Origins – Universe, Galaxy, Solar Systems, Planetary Bodies	Surface Structures and Architecture	09:30 Walking and College Tour of the Oldest	
10:00	ARRIVAL MEET & GREET (Heathrow or	GSDC	Importance of Planetary impacts and Mass Extinctions	Space Structures	College in Oxford and Pitt River Museum	
	Gatwick Airports)		BREAK		11:30	
11:00		GSDC TOPICS	Defining Life Astrobiology and The Search For Life In The Solar System and Universe	Electrical and Electronics Engineering	Mathematics Workshop	
12:00	Optional					
12.30	<b>12:00</b> Victoria and Albert		LUNCH			
13:00	Museum  Natural History Museum	Space Now And Space In The Future	Exploring Earth's Inner Space Deep Submersibles and Black Smokers	University Admissions	13:15 Crash Course in Thermodynamics and Rocketry	
14:00	40.00	Geophysics			15:00	
15:00	<b>16:00</b> Victoria and Albert	Astronhysics	WORKSHOP	WORKSHOP	Rocket Launch Competition	
15:00	Museum	Astrophysics	CAD Computer Workshop	Personal Statement	Competition	
16:00	Natural History Museum	The Human Body in Space				
17:30	DINNER	DINNER		DINNER		
18:00			DINNER		DINNER	
18:30 19:00		Ice Breaker Karaoke		Football Park activities	DEPART FOR LONDON	

Start				
times	Thursday 16 <sup>th</sup> July	Friday 17 <sup>th</sup> July	Saturday 18 <sup>th</sup> July	Sunday 19 <sup>th</sup> July
07:45	DDE AVEA OT	BREAKFAST	DDEALEACT.	DDEAL/EACT
08:00	BREAKFAST		BREAKFAST	BREAKFAST
08:30		08:30		
09:00 09:30	Satelites and Remote Sensing	DEPART FOR CAMBRIDGE UNIVERSITY 10:30	RFP	09:00 introduction to the Space Design Competition
		Tour Cambridge Unversity		
10:00		Tour Gambriage Onversity		
10.00	Systems and Security Engineering		Company Organisation	10:30 Company Officer Selection
10:30	BREAK		BREAK	10.00 Company Chicer Celebrion
11:00	Robotics		Managing Companies	11:00 Department Presentations
42-00		LUNCH	LUNCH	LUNCH
12:00 12:30	LUNCH	LUNCH	LUNCH	LUNCH
	LONGIT			
13:00		WORKSHOP	WORKSHOPS	Space Design Challenge
13:30	Laboratory Workshop High Performance Liquid Chromatography and Mass Spectrophotometry on Organic Chemicals from Space	Computing Workshop	Presenting Skills Writing Skills Leadership and Communication	
14:00				Space Design Challenge
15:00				
17:00	DINNER	DINNER	DINNER	
18:00				DINNER
19:00	MOVIE	DEPART FOR LONDON		Space Design Challenge

Start times	Monday 20 <sup>th</sup> July	Tuesday 21 <sup>st</sup> July	Wednesday 22 <sup>nd</sup> July				
08:00	BREAKFAST						
09:00 10:00 10.30 11:00	09:00 Turn in Designs  10:00 COMPANY PRESENTATIONS  Each Company will have 30 minutes plus 10 minutes judges questions  11:30 Post It's with Jenny Lyons	10:00  Open Top Bus Tour of London London Embankment Buckingham Palace London Bridges Tower of London	FAREWELLS AND DEPARTURES FOR HOME				
12:00	LUNCH						
13:00	Judges Presentation and Winning Company Announcement						
14:00 15:00 15:45	FREE TIME						
16:00	AWARDS	River Dinner Cruise on Thames and Fun Presentation Awards					
17:00 18:00	DINNER						

## Selected Guest Speakers



**Dr Randall Perry** 

SSEF & SDC Founder,

Senior Research Investigator Imperial College London, Royal Society Fellow and University of Oxford Fellowship



Marcus du Sautoy FRS, OBE

Simonyi Professor for the Public Understanding of Science and a Professor of Mathematics at the University of Oxford.



**Dr Richard Ghail** 

SSEF Trustee Chair

Lecturer in Engineering Geology, based in the Department of Civil and Environmental Engineering, Imperial College London



Trisha Saxena

Alumni of the UKSDC and the International Space Design Competition

Final year at Imperial College London, studying Physics



**Alison Ahearn** 

Deputy Director Galactic Challenge

Principal Teaching Fellow at Imperial College London



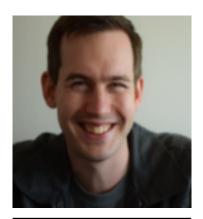
Jeremy Curtis

Head of Education and Skills, UK Space Agency



Professor Mark Sephton

Head of the Department of Earth Science and Engineering, Imperial College London.



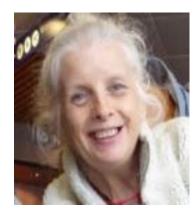
**Scot Fisher** 

Scott Fisher is an Opto-Mechanical Engineer Surrey Satellite Technology Ltd



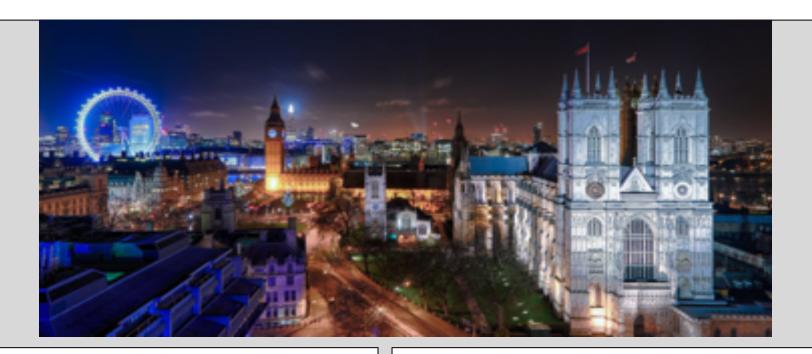
Kamogelo Thutoestsile

Medical Doctor, studied at University of Cambridge, Alumni UKSDC and NASA ISSDC



Jenny Lyons

Director of Education Outreach UK Space Science Engineering Foundation



#### **ACCOMODATION AND MEALS**

All rooms are in Imperial College London, within a short walking distance to the venue. Rooms are two person shared however other options are available on request. Meals included are Breakfast, Lunch and Evening Meal.\*\*

#### **MENTORS**

Experienced Space Design alumni available 24hrs a day for all participants.

#### **AIRPORT MEET AND GREET**

Students will be individually met at airport arrivals by a member of our staff and transfers to accommodation will be provided.\*\*\*

#### **Further Information**

HEALTH – Students will have access to a nurse, GP and hospital facility 24hours a day.

CLIMATE - Summers have pleasant temperatures with **average** high temperatures around 21 degrees Celsius (70°Fahrenheit) and night temperatures of 11 degrees Celsius (52°F).



For more information contact us at:

enquiries@gspacedc.com

Call +44 (0) 7986928535/ 7584190961 https://gspacedc.com

- \* the twelve students selected to go to NASA the following year will have additional costs not provided by the Global Space Design Challenge
- \*\* Adult rooms available upon request
- \*\*\* Collection/Return only available from Heathrow or Gatwick Airports

Global Space Design Challenge Ltd, 143 Old Church St, London, SW3 6EB, England Company registration 10789489



**GLOBAL SPACE DESIGN CHALLENGE**