



9th - 13th July 2018

> MEET

> LEARN

> DESIGN

> LAUNCH



TEAM-UP WITH ASTRONAUT MICHAEL FOALE  
& LAUNCH YOUR IDEAS INTO SPACE!

www.isset.org



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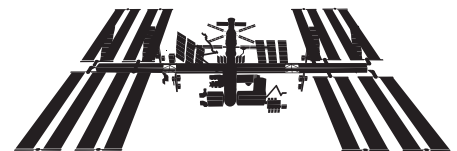
“ *It was great to learn from such inspirational astronauts and experts through Mission Discovery, I had a fantastic time.* ”

- Emily Yeomans, Mission Discovery Student

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# // YOUR MISSION:



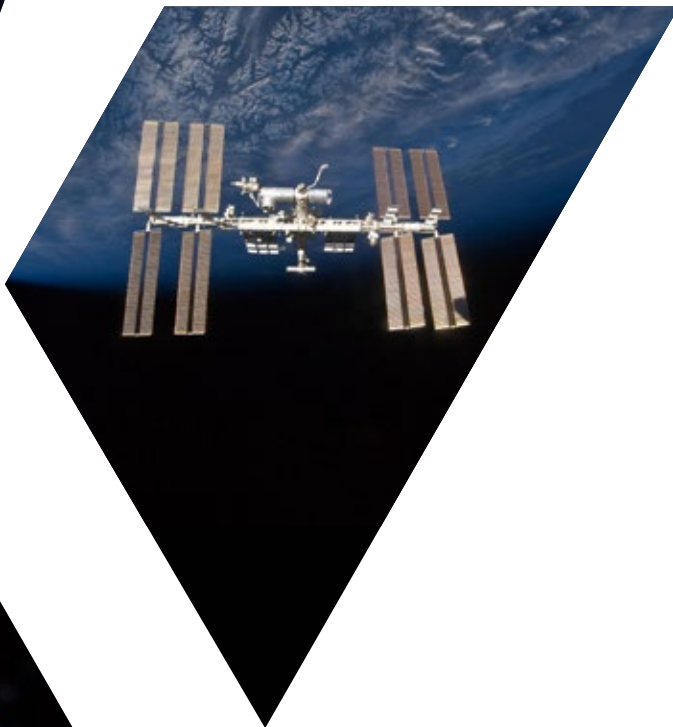
- Spend 5 days at King's College London working with astronauts, world renowned scientists and **NASA** leaders, in the UK's most exciting STEM summer school!
- Take on the role of a research scientist and work as a team on a science project. Your mission is to create an experiment which will be carried out in space and present your idea to our board of esteemed judges.
- The judges will pick one winning team whose experiment will be built by KCL and NASA, launched to the International Space Station (ISS), and carried out in space by the astronauts aboard the ISS.
- Sign-up for the 7th annual King's College London Mission Discovery programme, enhance your CV / UCAS application and join the forefront of human space exploration.

# // EXPERIMENTS IN SPACE



“ The Space Station  
is the final frontier of  
biomedical research. ”

- Forbes Magazine



ISSET have sent a record number of experiments to the ISS. This includes work on Genetics, Alzheimer's disease and Parkinson's disease.

The International Space Station is the most famous laboratory on Earth... or off it! With vigorous competition in the scientific community to get an experiment on board.

Mission Discovery has given students from all over the world the opportunity to have their experiment carried out by some of the worlds elite, such as astronauts Tim Peake and Scott Kelly, to name a few.



# // INSPIRING S.T.E.M.

**Personal Objectives:** Learn how to...

- Work successfully in a team
- Plan the execution of a project
- Achieve a goal
- Follow efficiently and lead effectively
- Achieve your DofE Gold award
- Deliver a persuasive presentation
- Confidently speak in public
- Make your UCAS application stand out!



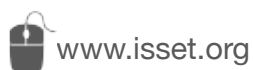
Mission Discovery focuses on Science, Technology, Engineering and Maths...  
The future of **STEM** starts with you!



Mission Discovery experiments receive national media coverage. Students have appeared in international press, on NASA TV, BBC Breakfast, Channel 4 and ITV News and more.

*“People like me don’t win things like this.”*

- Mahdi Baksh, on BBC Breakfast talking about her winning experiments launch





# //MISSION AGENDA

## EACH DAY

The Mission Discovery team will dine and socialise with students for lunch. Personal certificates/prizes will be awarded daily.

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### Monday

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NASA team-building  
Leadership types  
Personal development  
Teams are formed

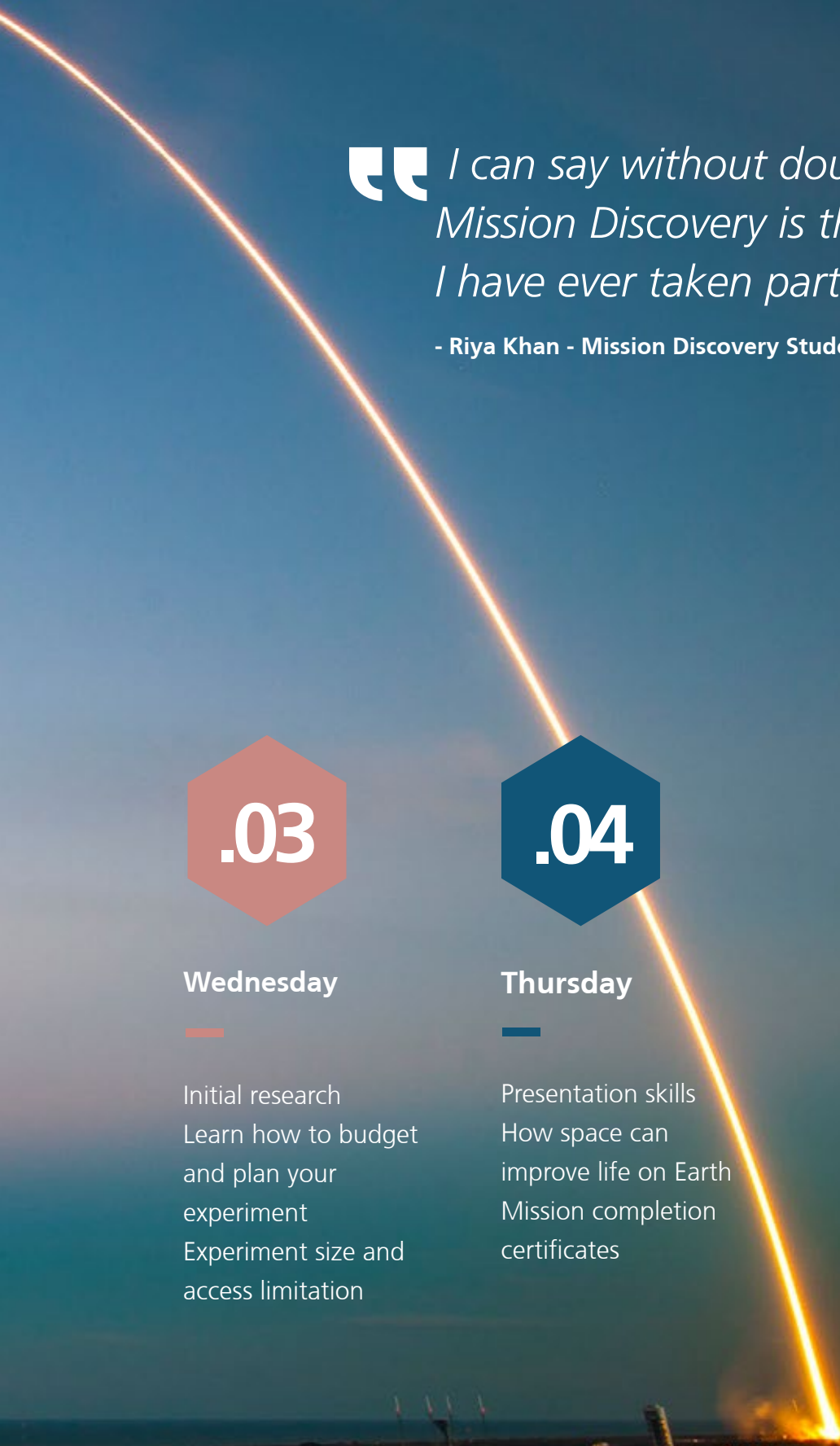
.02

### Tuesday

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Previous experiments  
in space  
Working in space  
Design Brief  
Initial hypothesis ideas





“ I can say without doubt that  
Mission Discovery is the best thing  
I have ever taken part in. ”

- Riya Khan - Mission Discovery Student

.03

Wednesday

Initial research  
Learn how to budget  
and plan your  
experiment  
Experiment size and  
access limitation

.04

Thursday

Presentation skills  
How space can  
improve life on Earth  
Mission completion  
certificates

.05

Friday

Final presentations  
Mission Discovery  
students vote  
Winners announced

# // THE TEAM

Mission Discovery introduces you to the highest level of NASA Leadership, Space Exploration and Biomedical Research. Below is just a small selection of the members who will make up the 2018 team.



## **Dr. Michael Foale CBE - Astronaut, Astrophysicist & ISS Commander**

Mike was the first British-born NASA Astronaut and has been into space on 6 missions. His experience includes; being Commander of the International Space Station, bringing the Hubble Space Telescope back to life and having a major role in saving the Russian 'Mir' Space Station as it tumbled out of control around the Earth, following the only collision in outer-space. He has had a range of senior roles in NASA that include having been the Deputy Administrator at NASA HQ, Chief of the Astronaut Office Expedition Corps & Assistant Director of the Johnson Space Centre. Mike held the record for the number of days spent in space.



## **Sarah Murray - NASA's Mission Support & Partnership Councils Exec.**

Sarah is the Council Executive for NASA's Mission Support Council & Partnership Council at NASA HQ. Working with NASA's Deputy Administrator and Deputy Associate Administrator, she is responsible for facilitating NASA's governance process across NASA centres throughout the US. She has also served as Assistant Division Chief for EVA, Robotics and Crew Systems where she was responsible for the Neutral Buoyancy Laboratory Space Walking training facility. She has held roles in Astronaut Training and Mission Control. She has been Deputy Chief of Space Flight Training Management where she was the Chair of the International Training Control Board, responsible for training astronauts and cosmonauts.



## **Dr. Julie Keeble - Lecturer of Pharmacology**

Julie is a lecturer in the Institute of Pharmaceutical Science at King's and is a jointly affiliated with of the Centre for Human & Aerospace Physiological Sciences. Her research focuses on the role of sensory nerves, pain, inflammation and thermoregulation. Julie is also ISSET's Chief Scientist and is responsible for ensuring that all winning Mission Discovery experiments are launched to the International Space Station.



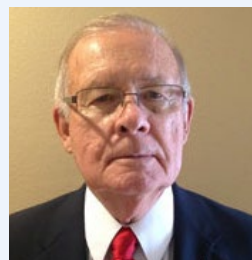
### **Prof. Steve Harridge - Professor of Human and Applied Physiology**

Steve is a Professor of Human & Applied Physiology and a Director of the Centre of Human and Aerospace Physiological Sciences at King's College London. His research focuses on human skeletal muscle function, and its effect on the ageing process. Steve is an editor for both the Experimental Physiology journal and the Scandinavian Journal of Medicine and Science in Sports.



### **Dr. James Clarke - Lecturer of Applied & Human Physiology**

James holds a lectureship in Human & Applied Physiology at King's College London. He carries out his research investigating heart failure and post-infarction remodelling within the Cardiovascular Division and has been awarded a British Heart Foundation Research Fellowship. James is on the editorial board of Extreme Physiology & Medicine and is a member of the International Society for Heart Research, the British Cardiac Society and the Physiological Society.



### **Jay Honeycutt - Former Director of Kennedy Space Centre**

Jay is the former Director of NASA's Kennedy Space Centre and the former President of Lockheed Martin Space Operations. As an engineer Jay has had almost unrivalled senior level experience with NASA in the Apollo, Skylab, Apollo-Soyuz and Space Shuttle Space missions.



### **Chris Barber - Space Educationalist**

Founder of the International Space School Educational Trust (ISSET). ISSET has been developed to be the UK's most exciting space educational organization, running programs in the UK, USA, China, Arctic and India. Chris has had extensive careers in both finance and education. He is also a Leadership and Organizational Improvement Consultant.



## // LOCATION

**King's College London is one of the top 25 universities in the world**....A research led university based in the heart of London, King's has nearly 27,600 students from 150 countries.

King's has one of the largest Medical Schools in Europe and is one of the leading research Universities for biomedical research. It is also home to the Centre of Human & Aerospace Physiological Sciences (CHAPS). CHAPS is focused on human physiology its adaptation in health and disease.

**Not from London?** Not a problem, we also offer a fully catered residential package, starting on Sunday 9th July. See more details on our website: [isset.org/mission\\_discovery](http://isset.org/mission_discovery)



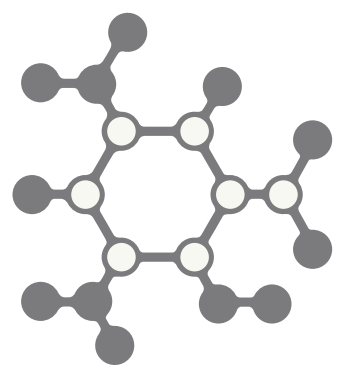


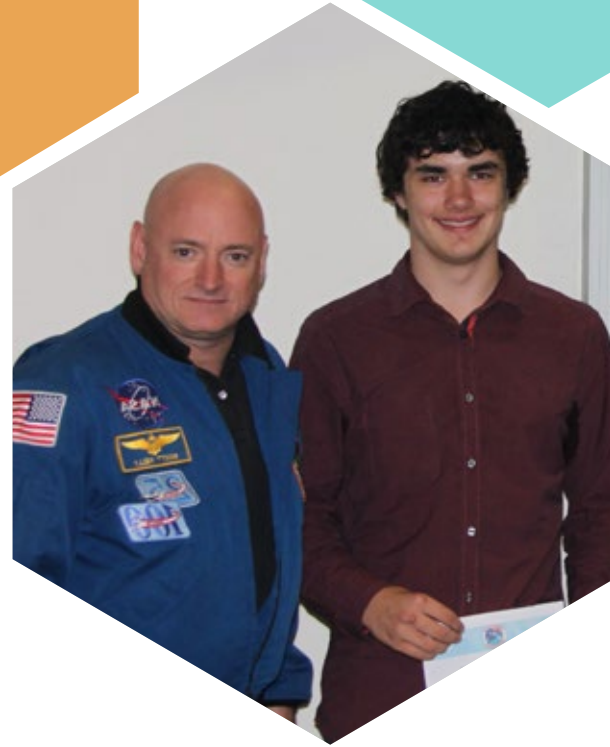
MISSION  
DISCOVERY



**Why Biomedicine?** Mission Discovery at KCL has a biomedical focus. Biomedicine is essentially the science of investigating the basis of health and disease in humans and animals.

For astronauts to remain fit and healthy it is important that we understand how the body responds and adapts to space travel. This study of the astronauts' health can help increase our understanding and disease processes that affect us here on Earth.





# // FEEDBACK

“ *Mission Discovery was a brilliant, motivational and inspiring programme that I was thrilled to be a part of. I enjoyed every aspect of the summer school, from working in teams to produce our experiments, to listening to lectures from professors at King's College London.* ”

- Eleanor, Gumley House School



“ *It's a huge deal in our lives. It's an honour to work with all these people who have worked so hard to be where they are.* ”

**- Casey Sather, Mission Discovery 2014 winner**

“ *Mission Discovery is the most complete and exciting educational programme I have worked with. I'm always excited to see where the students imagination takes them and watch them develop throughout the week. When I was young, I would have loved the chance to have an experiment flown in space.* ”

**- Astronaut Dr. Michael Foale CBE**

# MISSION DISCOVERY

MEET

LEARN

DESIGN

LAUNCH

“Mission Discovery was, by far, the most comprehensive, interesting, and educational endeavour I have been involved with.”

- Mike McCulley, Former NASA Astronaut & President of United Space Alliance

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