Off World Living

Andrew Edkins
The Bartlett
UCL
Scope of this presentation

- To consider the motivation
- To consider our point of inflection and reflection
- To consider the challenge
- To consider the rationale for OWLI
We have a history of pushing boundaries and venturing into the unknown.
Big player interest: east and west, public and private
What we can achieve with our technology and ingenuity
JOURNEY TO MARS

- Hubble
- International Space Station
- Space Launch System (SLS)
- Orbiters
- Landers
- Phobos
- Demon
- Orion
- Solar Electric Propulsion
- Asteroid Redirect Mission
- In-Space Habitat
- Mars Transfer Spacedraft

NASA
A time of Crisis
The Challenge of Off World Living

- The Power and Determination needed - over the timescale required:
  - Political leadership (capital and lowercase)
  - Public and media support
  - Regulatory regime
  - Money

- The Science and Knowledge
  - Hard/soft; pure/applied; natural/social - all sciences - and new blended and new emergent
  - Gathered knowledge coupled with modelling, simulation and rehearsal

- Technologies
  - Traditional
  - Emergent
  - New
  - Yet to be imagined:
    - Challenge ‘pull’
    - Trajectory ‘push’
We realise the challenge we face.

We need to draw on all sources of possible solution.
UCL: radical, realistic and exploratory

UCL: large and ‘full’ university with excellent connections across sectors and geographies

Off World Living is a topic that is ‘ripe’ for UCL to focus on and contribute to

The rationale for OWLI

With research in UCL’s DNA, the opportunities look interesting:

- Evolving the known – engineering /architecture / anthropology / laws / policy
- Developing the emerging – autonomous robotics / new material creation (e.g. regolith + lunar water) / AI/ML / 3D printing
- Founding the new – OWL new scientific areas, e.g. one-stop autonomous local material creation, manipulation and habitat formation
• Owls sit well in trees
• OWLI sits well at UCL
• UCL with OWLI has potential for the next 100 years to:
  • **T**each new students OWL issues, challenges and topics - and how we can apply them to our precious planet at a precarious time
  • **R**esearch the many (many) topics that we will need to master
  • **E**ngage with those working on and fascinated by OWL
  • **E**nterprise opportunities for new invention, innovation, collaboration and knowledge exchange
So, what have we learned?

- If humans can – humans will try
- Our state of knowledge, technology and confidence is driving the quest to get humans to other worlds
- To achieve the quest of off world living will require tenacity, collaboration and new solutions and discoveries – with potential payoffs for our planet at a time of need
- The role for a university such as UCL in considering ‘all things OWL’ is clear, obvious and truly exciting
Thank you

Andrew.Edkins@ucl.ac.uk