Astrobioneers

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Aim

- Improve farming on Earth and beyond
  - Extraterrestial farming
  - Moon vs. Mars

Relevance

- Innovate food systems on Earth
  - Hydroponics/aeroponics -> deserts
  - Resource efficient: water
  - Extremophiles: Resillience
- Role in space exploration and colonization
  - Supply and transport challenges

© NASA: illustrations of NASA astronauts on lunar South Pole.

Challenges

- Extreme conditions
  - Microgravity, radiation and extreme temperatures
- Resource availability
  - Limited water & soil (eg. salinity), atmosphere conditions (e.g. thin air)
- High levels of toxic chemicals
- Mimicking symbiosis - mesocosms

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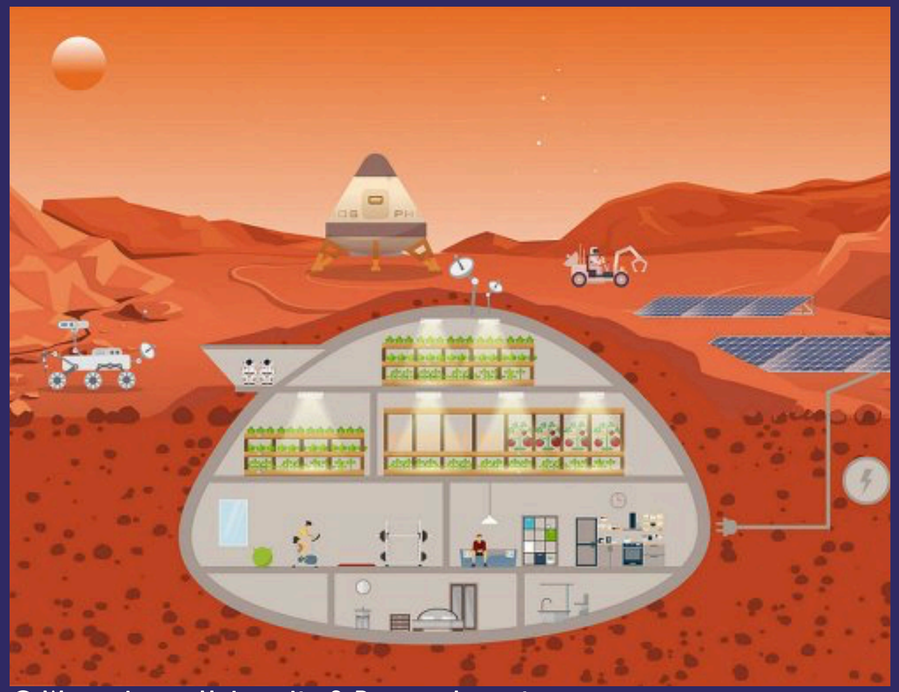
Current research 1/2

Mars and Moon

- Accounting for light differences
- Bacteria for desalination
- Symbiotic relationship have been researched
- Designed plants with extremophile genes
- Circumstances on planets



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Current research 2/2

Farming

- Wide array of plants grown
  - Space stations
  - Legumes, fruits, vegetables
- Bioregenerative life support systems
  - Recycling nutrients & preventing pollution of planet
  - Mesocosms: microbes + plants

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Process

- Weekly meetings
- Symbiosis
- Problems
- Re(Think) food challenge
  - Mars
  - Moon
  - Earth

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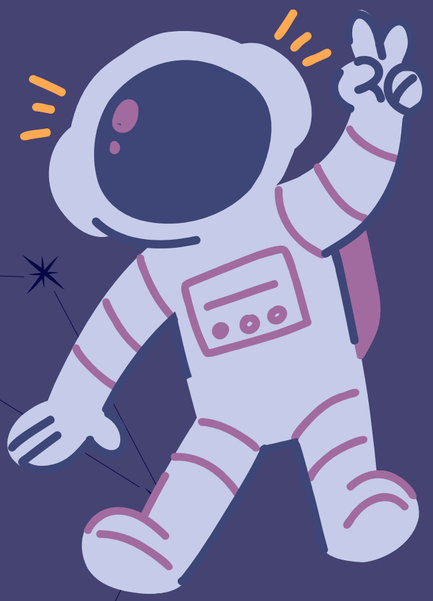
Stay updated!

AstroBioneers.com



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