

ISU Hydra Space Station Payloads

Prof Chris Welch
21 November 2018

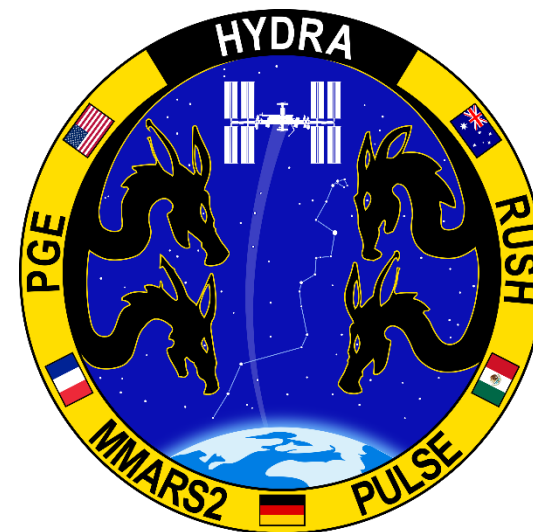




1. Why Hydra?



Hercules and Iolaus kill the Hydra



2. ISS Payloads



- Three 'Hydra' payload cubes are flying to ISS with ICE-Cubes.
- Hardware features innovative ISU-designed structures.
- Significant design and construction by ISU students.

- Two payloads are on board
 - Hydra 2: MMARS2 – improved version of MMARS1 + DOSIS
 - Hydra 3: Pulse – an interactive space art payload developed with Mexican space artist and ISU alum Nahum + RUSH

- One will fly December 4
 - Hydra 1: Plant Growth Experiment

SpaceX-CRS15 Launch (29 June)



Docking + Installation



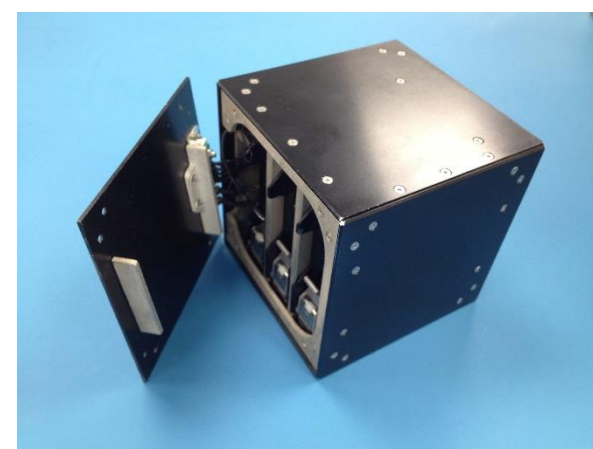
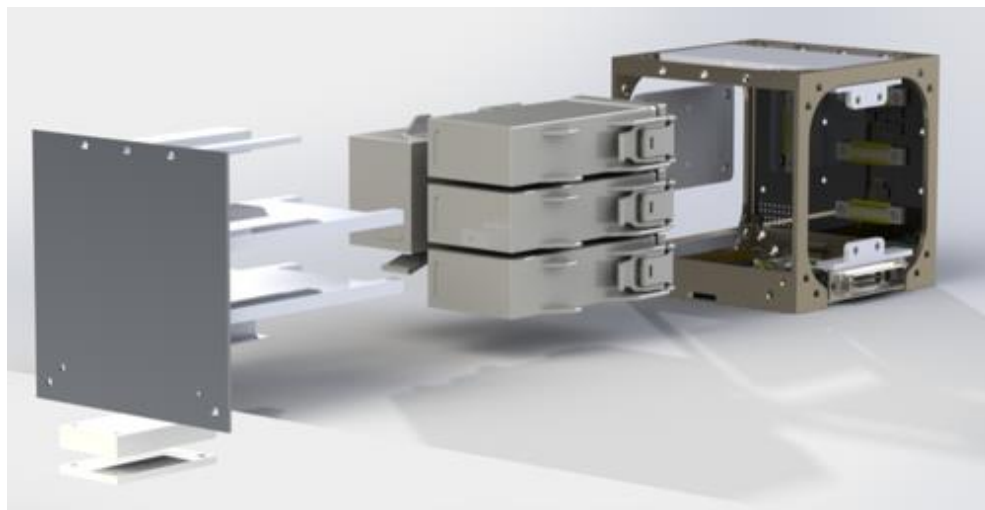
Hydra-2/MMARS2 + DOSIS

Lead: International Space University

Partners: University of Strasbourg, University of New South Wales, DLR

Main objective: Effect of space environment on methanogen growth.

Secondary objective: Measurement of radiation environment.



Hydra-3/Pulse + RUSH

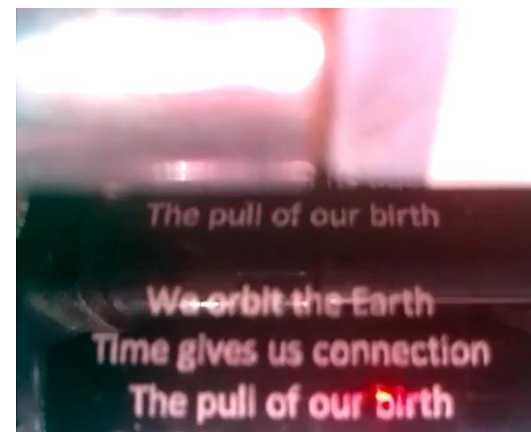
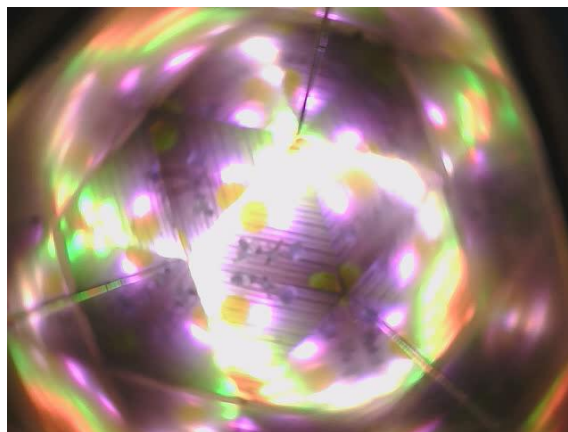
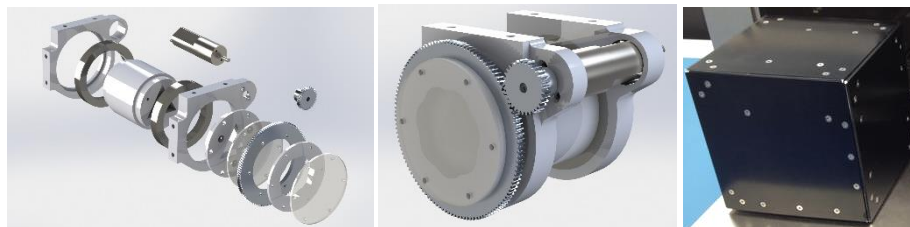


Lead: International Space University

Partners: Studio Nahum, MacQuairie University

Main objective: Interactive space art payload

Secondary objective: Tech demonstration of radiation tolerant electronics.



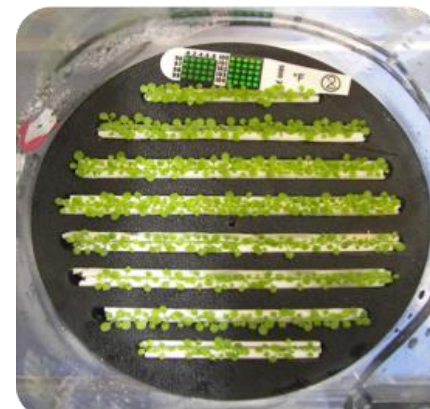
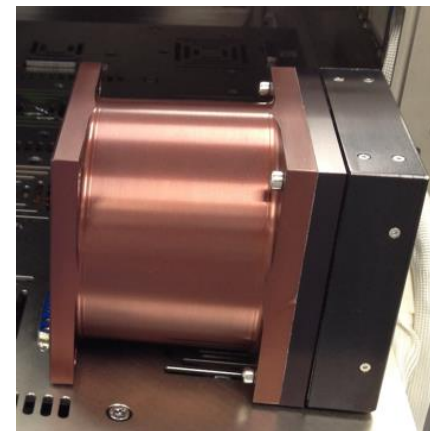
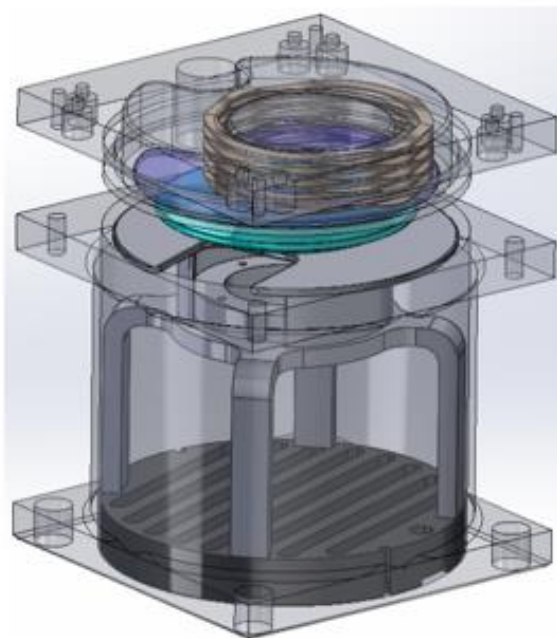
Hydra-1/Plant Growth Experiment



Lead: International Space University

Partners: Stanford University/Utah University, University of Strasbourg (NASA Ames)

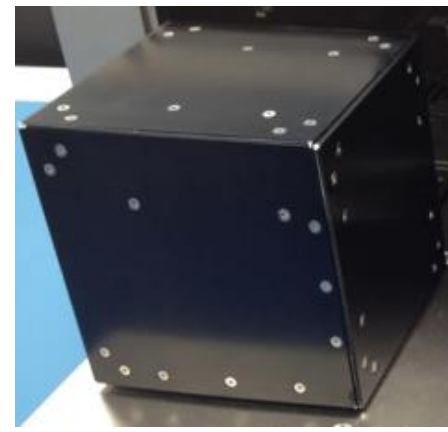
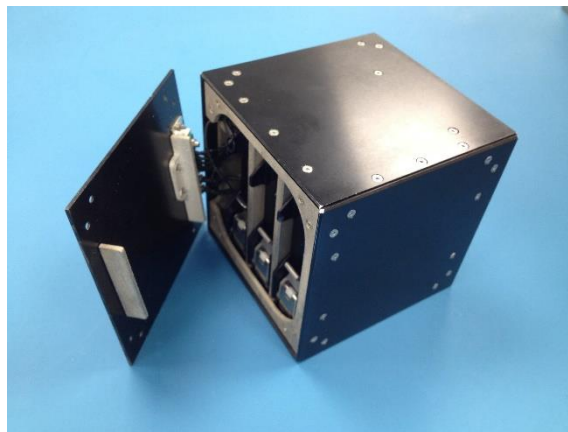
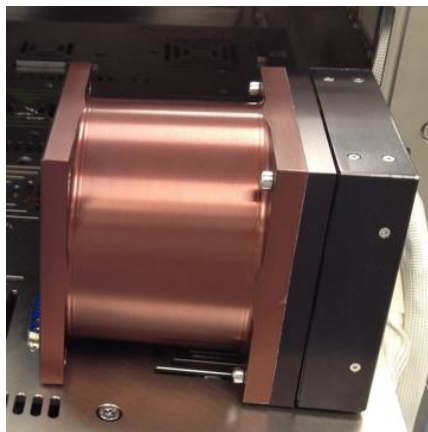
Main objective: Observation of transgenic seed chemically-inducible protein expression in a microgravity environment + DNA postflight analysis.





3. Benefits

- For ISU, key aspects of the ICE Cubes opportunity included:
- Enabling in-orbit research on a responsive timescale





- Promoting international co-operation



Stanford
University



MACQUARIE
University

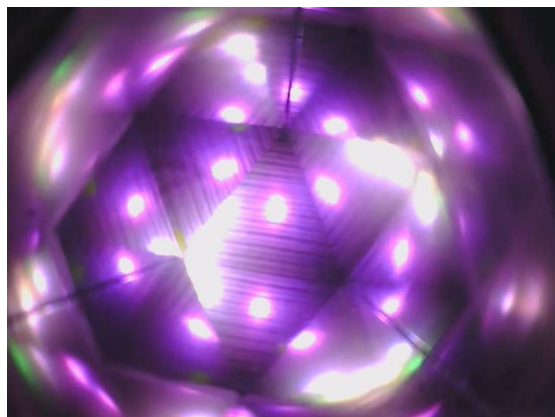
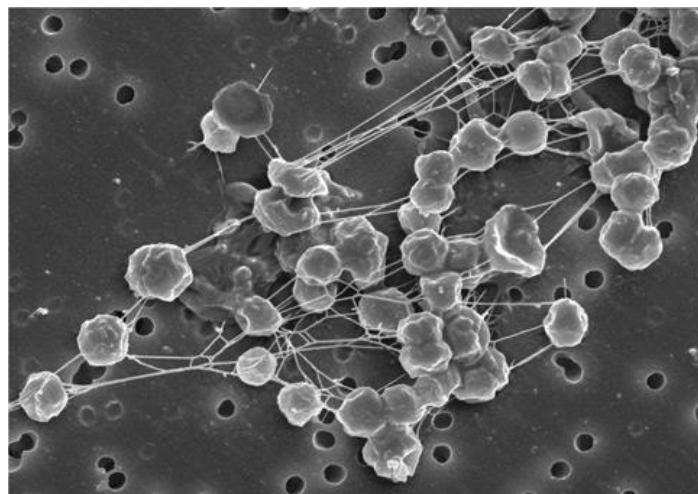
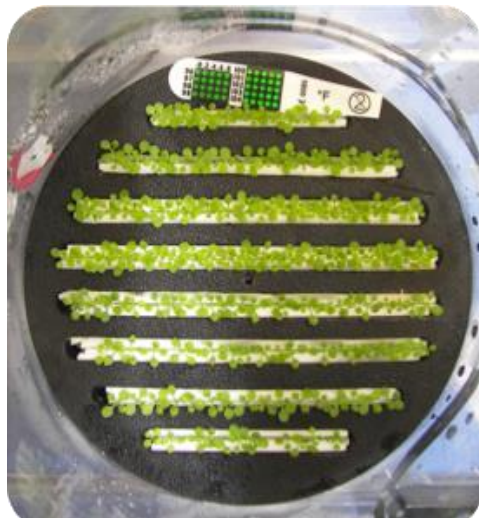
UNSW



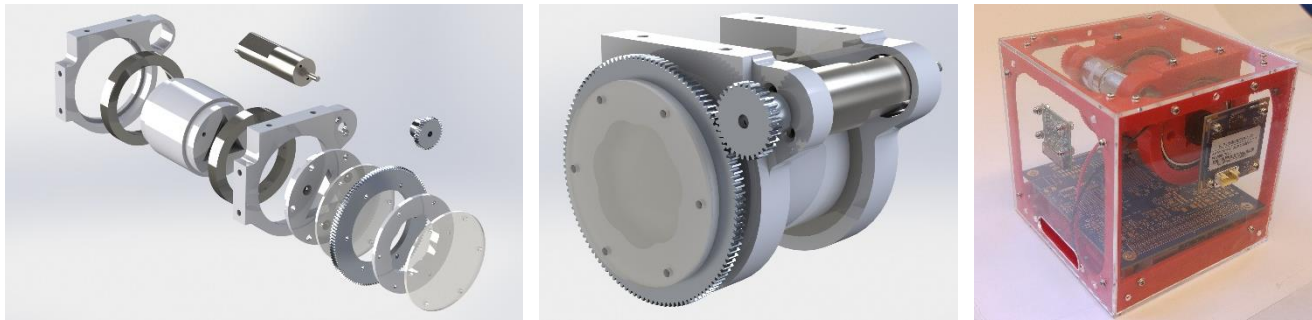
THE
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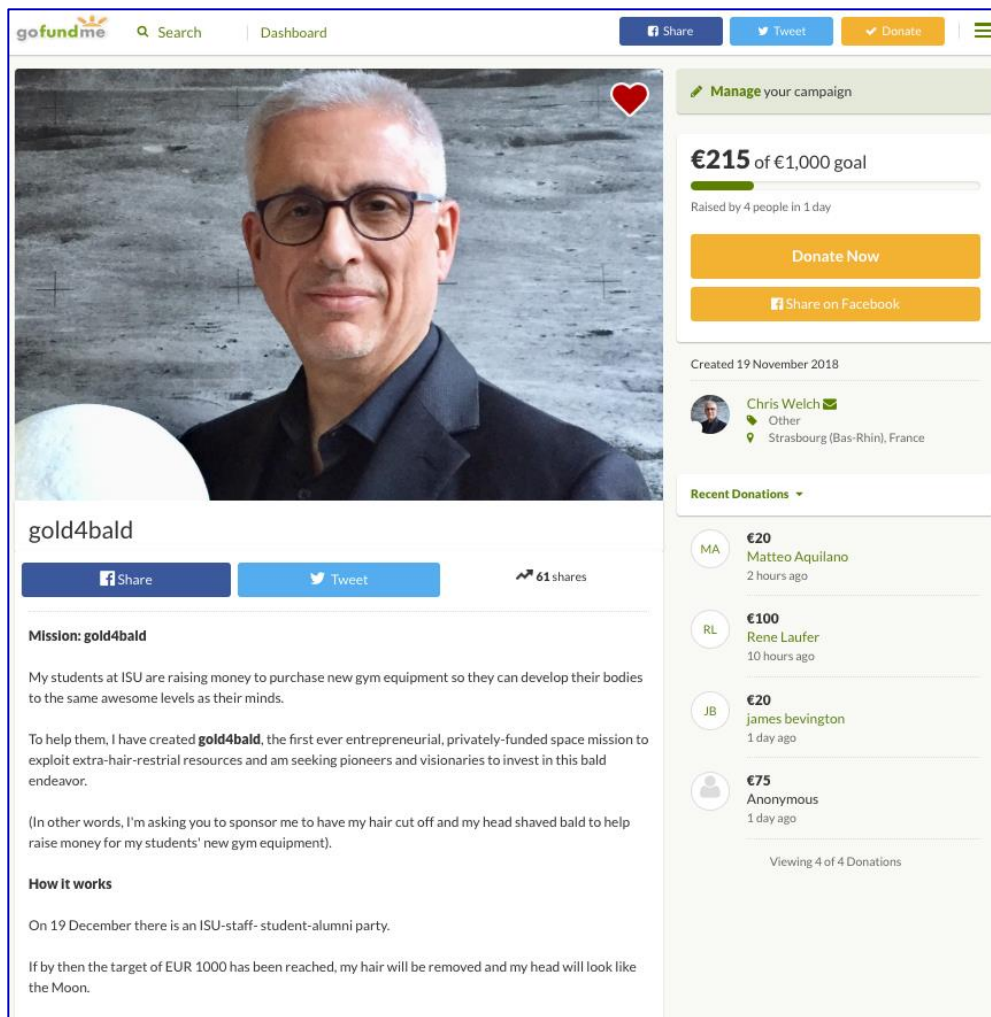
- Promoting ISU's interdisciplinary mission



- Direct engagement of ISU master's students in design and construction of space payloads



Advertisement

The screenshot shows a GoFundMe campaign page for 'gold4bald'. The campaign is led by Chris Welch, a man with glasses and a dark shirt, set against a background of the moon's surface. The campaign has a goal of €1,000 and has currently raised €215 from 4 people in 1 day. The page includes a 'Donate Now' button, a 'Share on Facebook' button, and a list of recent donations from Matteo Aquilano (€20), Rene Laufer (€100), James Bevington (€20), and an anonymous donor (€75).

gold4bald

Share Tweet 61 shares

Mission: gold4bald

My students at ISU are raising money to purchase new gym equipment so they can develop their bodies to the same awesome levels as their minds.

To help them, I have created **gold4bald**, the first ever entrepreneurial, privately-funded space mission to exploit extra-hair-restrial resources and am seeking pioneers and visionaries to invest in this bald endeavor.

(In other words, I'm asking you to sponsor me to have my hair cut off and my head shaved bald to help raise money for my students' new gym equipment).

How it works

On 19 December there is an ISU-staff- student-alumni party.

If by then the target of EUR 1000 has been reached, my hair will be removed and my head will look like the Moon.

Manage your campaign

€215 of €1,000 goal

Raised by 4 people in 1 day

Donate Now

Share on Facebook

Created 19 November 2018

Chris Welch ✓
Other
Strasbourg (Bas-Rhin), France

Recent Donations

- MA €20 Matteo Aquilano 2 hours ago
- RL €100 Rene Laufer 10 hours ago
- JB €20 james bevington 1 day ago
- €75 Anonymous 1 day ago

Viewing 4 of 4 Donations

www.gofundme.com/gold4bald



Thank you for your attention

