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Simulating Microgravity and Space Radiation With a Rotary Cell Culture System (RCCS)

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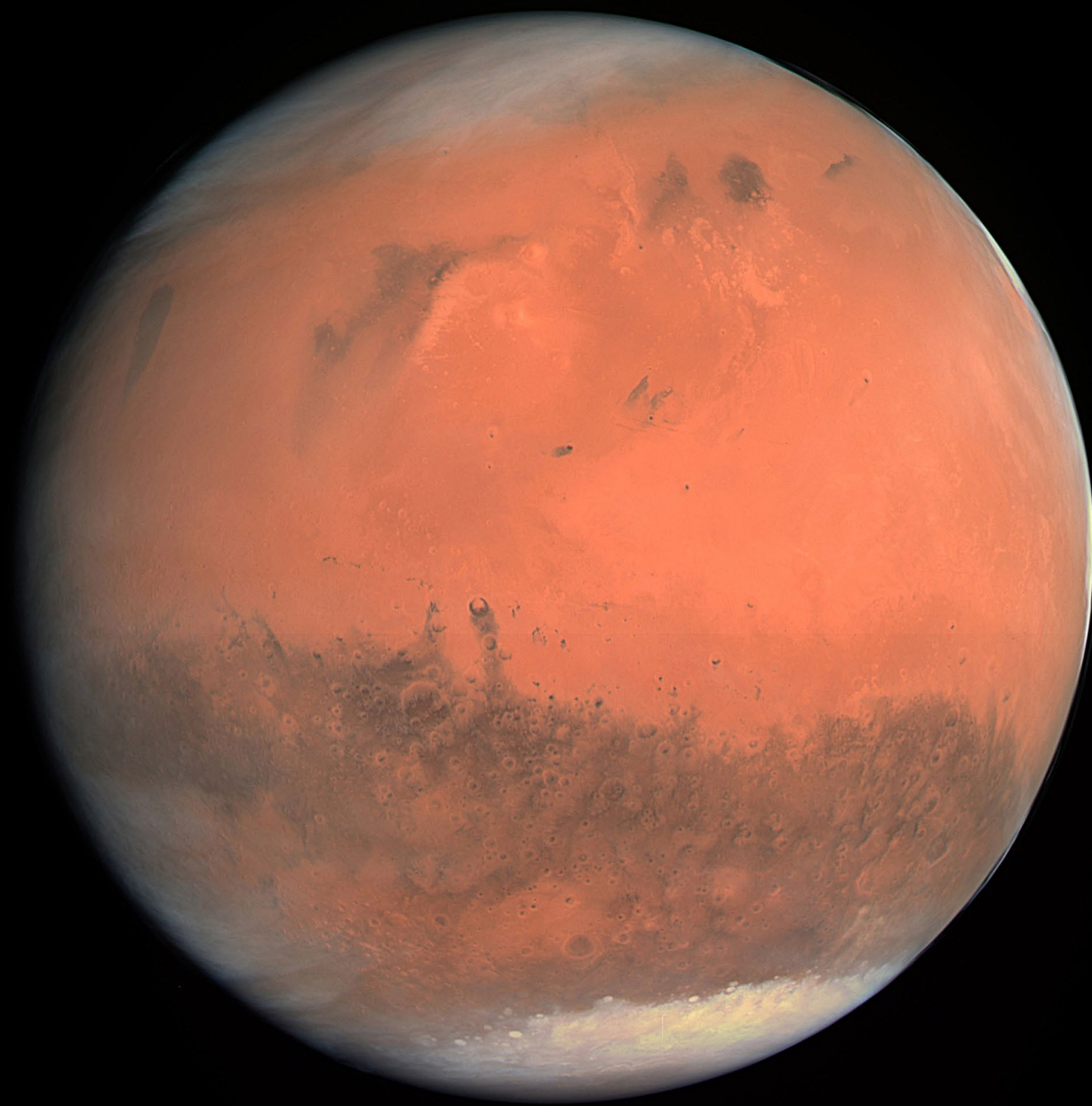
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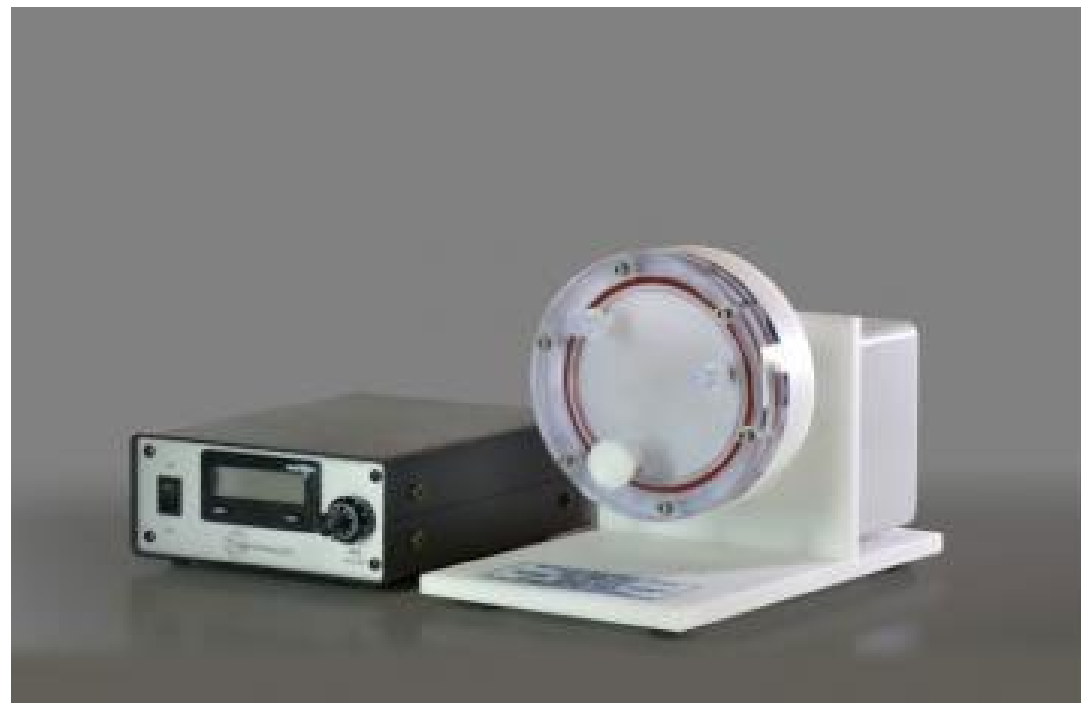
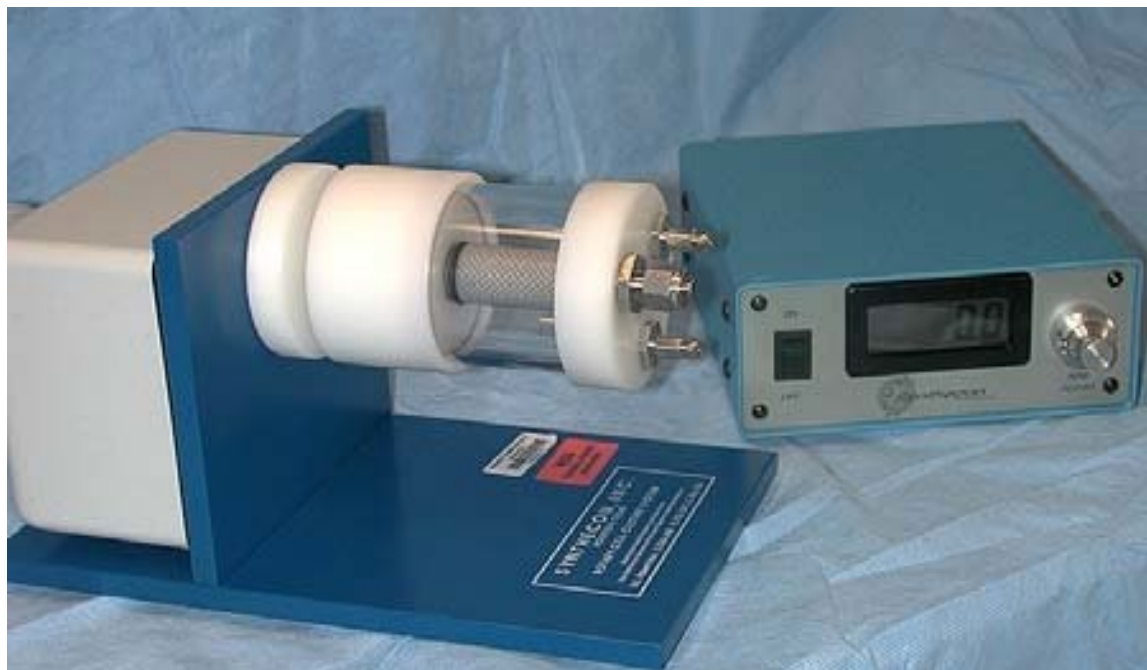


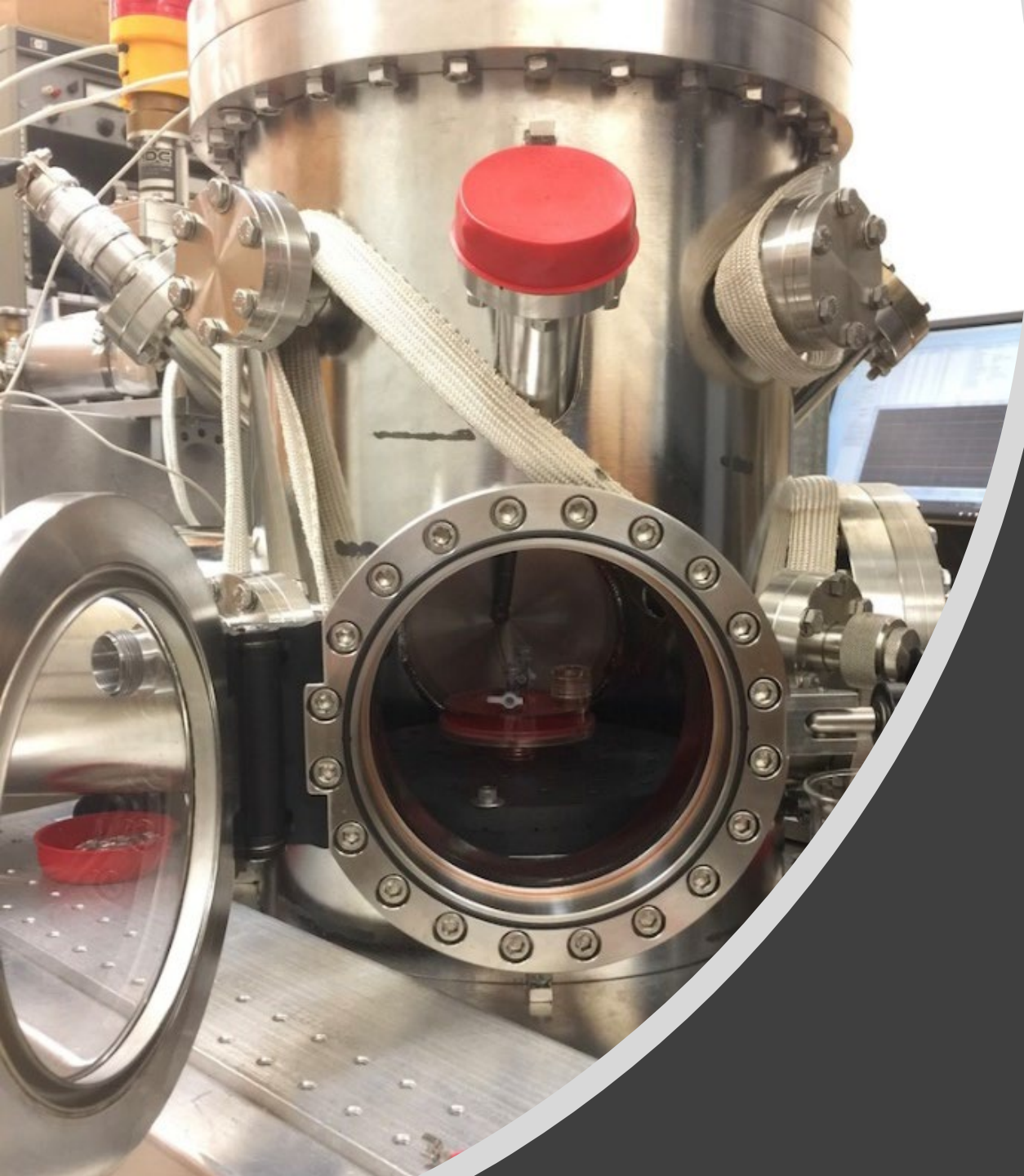


Simulating Micro Gravity and Radiation with a Rotary Cell Culture System (RCCS)

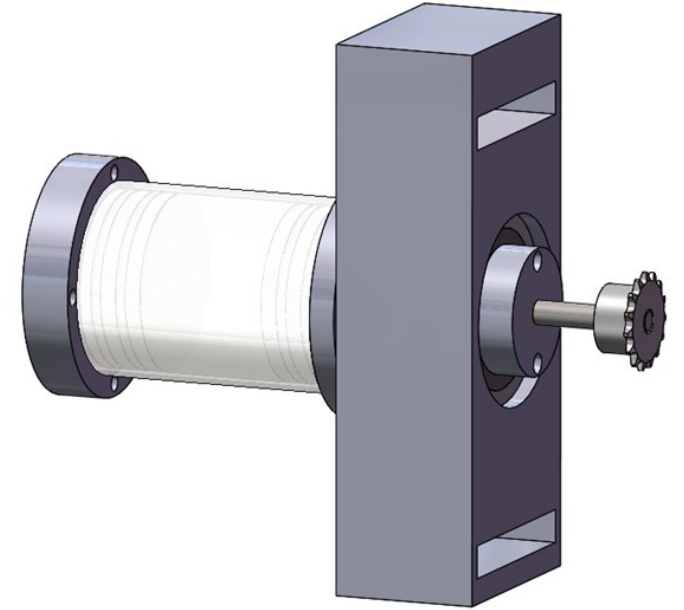
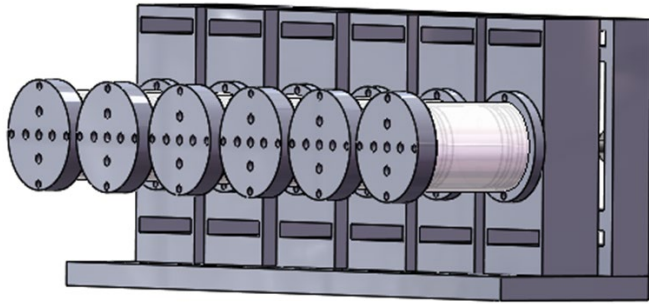
Alexandra Nelson

What is an RCCS?

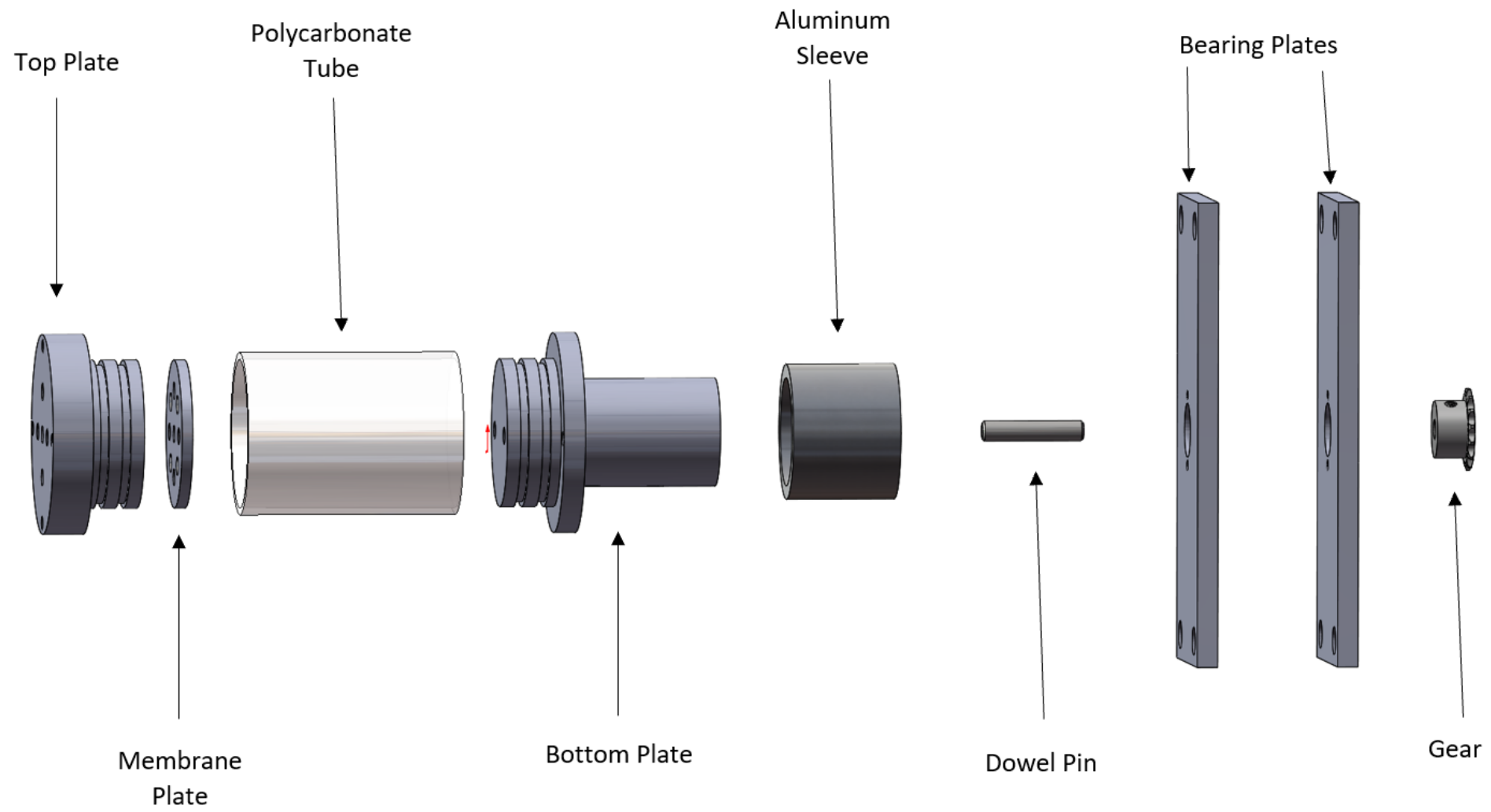


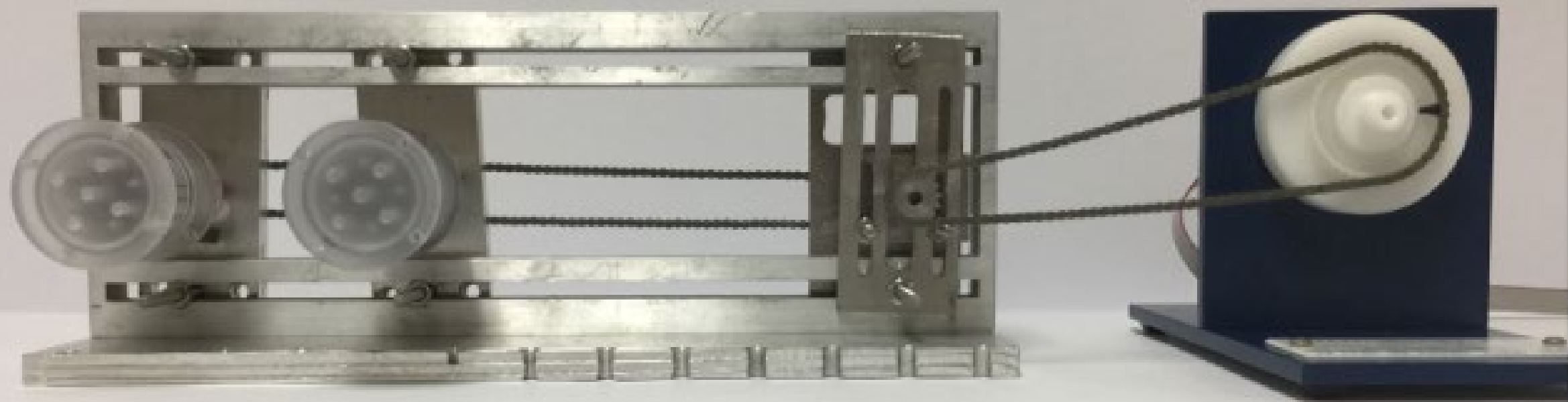


Why can we not
use a traditional
RCCS?



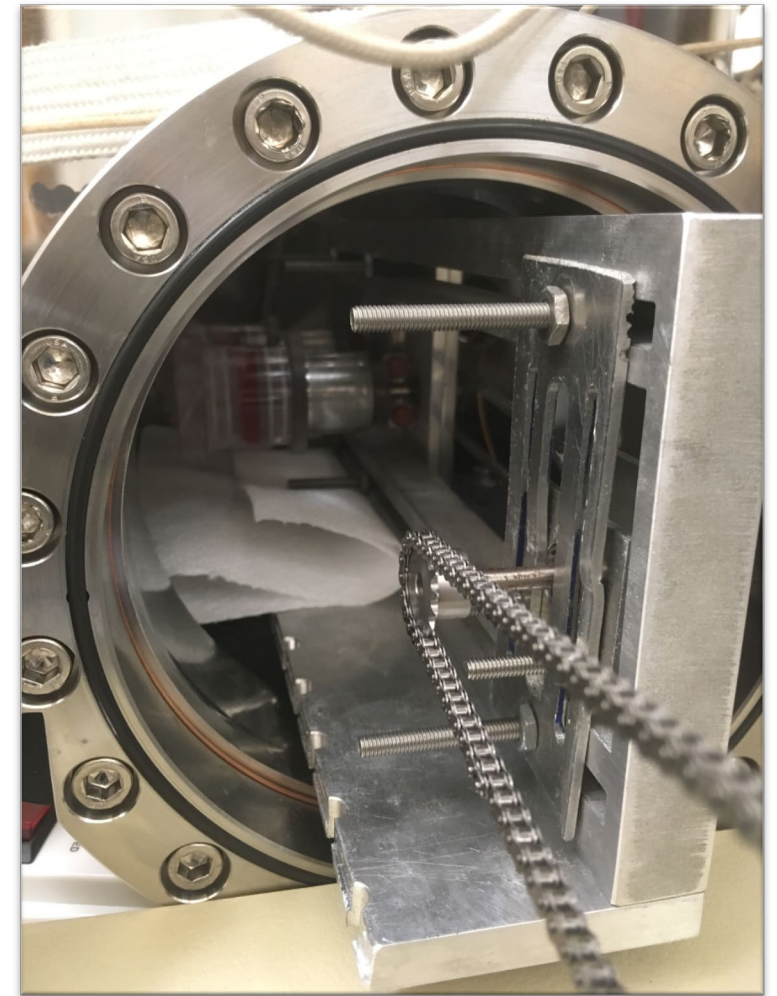
My Design





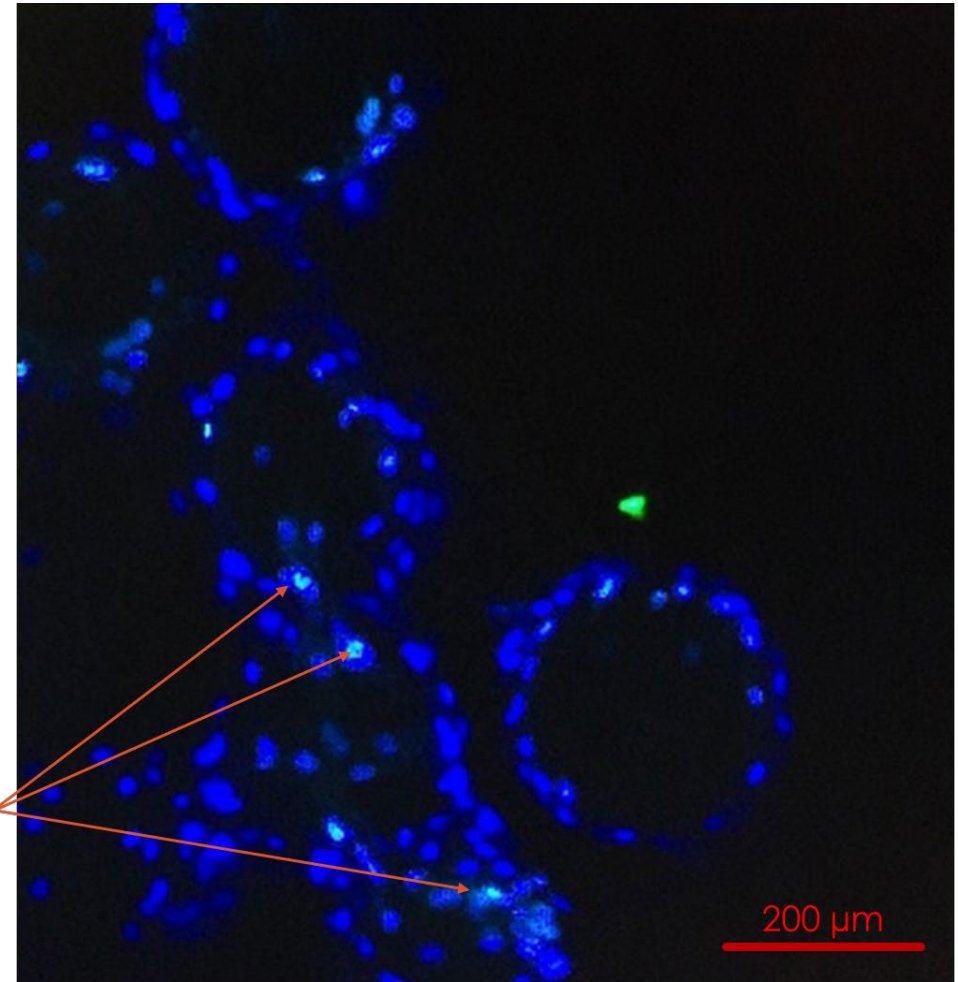
Testing Plans

Dosage Group	Radiation	Movement from Flask to Vessel	Microgravity Simulation	Status
4 Gy	+	+	+	Complete
	+	+	-	Complete
	+	-	-	Complete
	-	+	-	Complete
	-	+	+	Complete
1 Gy	+	+	+	Complete
	+	+	-	Complete
	+	-	-	In Progress
	-	+	-	Complete
	-	+	+	In Progress



Irradiated Cells

dsDNA Breaks



4 Gy
+Rad
+Move
+Rad
+μG
+μG

Acknowledgments

- Utah State Physics Department
 - JR Dennison
- Utah State Biological Engineering Department
 - Lori Caldwell
 - Eryn Hanson
 - Elizabeth Vargis

Questions