



# SSEP

## Student Spaceflight Experiments Program



### SSEP Mission 14 to ISS: *Apollo* Experiments Flying on SpaceX-21 Payload Summary

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#### 27 Experiments from the SSEP Mission 14 to ISS *Apollo* Payload Flying on SpaceX-21

	Community	Experiment	Team	Grades	At Launch
1	Sao Paulo, BRAZIL	The Influence of Microgravity on the Breakdown of Lactose and the Development of Bacteria in the Gut Flora	3 Co-Principal Investigators, 1 Investigator	11	
2	Edmonton, Alberta, CANADA	The Effect of Microgravity on the Early Development of Brine Shrimp Eggs	1 Principal Investigator, 3 Collaborators	7 and 9	
3	Halifax, Nova Scotia, CANADA	The Effects of Microgravity on an Activated Carbon Filtration System	3 Co-Principal Investigators	9	
4	Winfield, AL	What are the Effects of Microgravity on the Germination of <i>Aloe barbadensis</i> Seeds?	5 Co-Principal Investigators	6	
5	Buckeye, AZ	How will Microgravity Affect the Erosion and Durability of Teeth?	4 Co-Principal Investigators	7	
6	Corcoran, CA	Red Piranha Venus Flytrap Germination in Microgravity	2 Co-Principal Investigators, 2 Co-Investigators	7	
7	Moreno Valley, CA	Germination of Alfalfa in Microgravity	2 Co-Principal Investigators, 2 Co-Investigators	11	
8	Redlands, CA	Microgravity's Effect on the Germination and Early Growth of the Seeds of <i>Cymbopogon citratus</i>	1 Principal Investigator, 3 Co-Investigators	10-11	

9	Hillsborough County, FL	Spinach on the Station	2 Co-Principal Investigators	7-8	X
10	Pasco County, FL	How will Microgravity Affect the Efficiency of Amoxicillin on <i>S. Epidermidis</i> ?	3 Co-Principal Investigators	12	X
11	Anne Arundel County, MD	How does Microgravity Impact the Germination of Thyme	2 Co-Principal Investigators, 2 Co-Investigators	7	
12	Westford, MA	How does <i>Brassica napus</i> (rapeseed) Germinate in Microgravity?	5 Co-Principal Investigators	6	
13	Harper Woods, MI	The Effect of Microgravity on Tomato Seed Germination	4 Co-Principal Investigators	9-10	
14	Galloway, NJ – Stockton University	The Effects of Nitrogen Fixation in Microgravity	1 Principal Investigator	Under graduate	
15	Springfield, NJ	Pond Microorganism Growth in Microgravity	4 Co-Principal Investigators	7	
16	Shoreham, NY	Can Mung Beans Germinate in Microgravity?	1 Principal Investigator, 3 Collaborators	5	
17	Bethany, OK	The Effects of Microgravity on Culicidae Eggs	12 Co-Principal Investigators	10-11	
18	Enid, OK	Pinto Bean Germination Experiment	3 Co-Principal Investigators, 5 Co-Investigators, 19 Collaborators	6	
19	Pittsburgh, PA – University of Pittsburgh	Effects of Microgravity on the Oxidation of 3-D Printed Aluminum with Unique Topography	2 Co-Principal Investigators	15	
19	Pittsburgh, PA – University of Pittsburgh	The Effect of Silver Nanoparticles on the Immune Response of <i>Daphnia Magna</i> in Microgravity	4 Co-Principal Investigators	Under graduate and Graduate	
20	Sumter, SC	The Effects of Microgravity on <i>Artemia Franciscana</i> 's Growth Rate	2 Co-Principal Investigators, 2 Co-Investigators	6	
21	Knox County, TN	Effects of Microgravity on the Efficiency of Lactic Acid Fermentation in the Production of Kimchi	3 Co-Principal Investigators	11-12	
22	Burleson, TX	The Effects of Microgravity on Lentil Growth	5 Co-Principal Investigators	7	

23	Lumberton, TX	Mixing of PVA Fibers with Concrete in Microgravity	1 Principal Investigator, 1 Investigator	11	
24	Bellevue, WA	Effects of Microgravity on <i>Penicillium Chrysogenum</i> 's Ability to Inhibit Cell Wall Synthesis in <i>Staphylococcus Epidermidis</i>	3 Co-Principal Investigators	8	
25	Hayward, WI	Fish Egg Development in Microgravity	3 Co-Principal Investigators	7	
26	iForward-Grantsburgh, WI	Do Killifish Eggs Develop and Hatch in Microgravity?	1 Principal Investigator, 4 Co-Investigators	6-8	

The Student Spaceflight Experiments Program (SSEP) is a program of the National Center for Earth and Space Science Education (NCSSE) in the U.S. and the Arthur C. Clarke Institute for Space Education internationally. It is enabled through a strategic partnership with DreamUp, PBC and NanoRacks, LLC, which are working with NASA under a Space Act Agreement as part of the utilization of the International Space Station as a National Laboratory. SSEP is the first pre- college STEM education program that is both a U.S. national initiative and implemented as an on-orbit commercial space venture.