

Colorado Space Grant Consortium Undergraduate Space Research Symposium

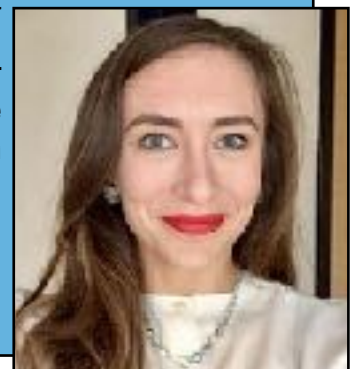


April 27, 2024
Front Range Community College,
Westminster, CO

Time	Activity	Location
8:40am - 9:25am	Check-in / Registration	Rotunda
9:30 am	Welcome and Opening Remarks	Rotunda
9:50 am	Move to sessions rooms	
10:00 - 10:20 10:25 - 10:45	Research Paper Presentation 1 Research Paper Presentation 2	Session A - Rotunda Session B - Room C-578 Session C - Room C-577
10:45am	Break	
10:55 - 11:15 11:20 - 11:40	Research Paper Presentation 3 Research Paper Presentation 4	Session A - Rotunda Session B - Room C-578 Session C - Room C-577
11:45am	Lunch	Rocky Mountain
12:15pm	Keynote	Rotunda
1:20pm 1:40pm	In-person Research Poster Session Virtual Poster Session (Zoom)	Rotunda Room C-578
2:40pm	Networking	Rotunda/Rocky Mountain
3:00pm	Award Ceremony	Rotunda
3:30pm	Event Adjourns	

2024 Keynote Speaker: Brianne Treffner

Bri grew up in Parker, CO and had a non-traditional journey to a career in the space industry. After a career in the restaurant industry, she returned to higher education where she (re)discovered her passion for space through joining Colorado Space Grant. After transferring to Red Rocks Community College, she joined the Sounding Rocket Payload Team where she worked with a team developing a payload focused on investigating methods of deorbiting small scale space debris. Bri continued this research, while continuing her education at Colorado School of Mines, by starting a student extracurricular activity that became a senior capstone project. While at CSM Bri was selected as an Astronaut Scholar. After graduation Bri has been working in the LA area at New Space Startups. This led her to work in Alaska as a launch vehicle integration engineer before pivoting to spacecraft development at Impulse Space. At Impulse she has worked on early mission planning for commercial missions to Mars, integration & test of Impulse's first spacecraft, and directly commanding the spacecraft as alternate mission director.



Paper Sessions:

Paper Presentations are limited to 15 minutes followed by 5 minutes of Q&A

Session A

10:00	Monitoring the High Altitude Survivability and Mutations of Bascillus Subtilis - <i>N.Clark, L.Crawford, T.Horrigan</i>	CSU
10:25	High Altitude Ozone Depletion Refrigerant Analysis - <i>C.Borrer, C.Harrison, D.Porter, A.Russ, K.Stathopoulos, M.Villasuso</i>	ACC
10:55	Climactic Change and the Survival of the “Living Dead” - <i>N.Knezevich, L.Kikani</i>	PCC
11:20	Sustainable Solar Powered Radiosonde - <i>B.Pritchard, J.Fitzpatrick, P.Mertens, W.Taylor</i>	FRCC

Session B

10:00	The FRCC Nostromo - <i>S.Voth, G.Wurtsbaugh, R.Bartell, S.Štimac-Knudsen</i>	FRCC
10:25	The Evolution of Robots: T.O.A.D & T.A.D. - <i>S.Worley, B.Williams, C.Newport, M.Salbato, Z.Evangelista, M.Chambers, G.Clark</i>	TSC
10:55	The Effect of Solar and Cosmic Radiation on Viscosity and pH of Pig Blood - <i>G.Kirk, N.Mauck, L.Rickert</i>	CSU

Session C

10:00	Interdigitated Capacitive Sensor for Great Lunar Expedition for Everyone Applications - <i>A.Miller</i>	CU
10:25	Long-range Unmanned New Artemis Rover Electric Mining Unit (LUNAR EMU) - <i>T.Tryon, D.Burch, P.Johnson, P.Loughhead</i>	UCCS/ UNSW
10:55	The Effects of Microgravity in Sintering Lunar Regolith Simulant - <i>N.Betz, K.Jackson</i>	RRCC/ ACC
11:20	HASP: WhenBuffsFly - <i>B.Hellem, E.Carreras, P.Braza, C.Brown, C.Zentner, Z.Goldberg, L.Egaas, B.Parrot, S.Vargas, S.Song, J.McDonald, E.Rimini, E.Bueno, H.Hill, N.Mueller</i>	CU

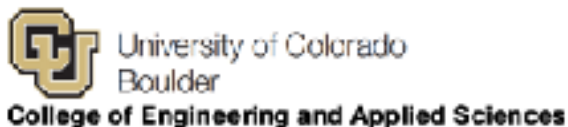
Event Sponsors

Jason Baugher

Christy Predaina

Lee Jasper

Corey Huffman



Poster Sessions:

Paper Presentations are limited to 5 minutes followed by 5 minutes of Q&A

Group 1

1:20	P-01: The Moxie Invader - <i>B.Hars, C.Johnson, C.Vinh, C.Betz, E.Trbovich, F.Sado, G.Jenuine, J.Meija, J.Zamora, V.Ponce, X.Bolden, Z.Dana, K.Henderson</i>	RRCC
1:32	P-02: LunaSat V7.0: A Leap Forward in Student-Designed Lunar Exploration Technology - <i>P.Braza, D.Orthel, M.Patil</i>	CU
1:44	P-03: WhenBuffsFly: To The Moon - <i>B.Hellem, E.Fiechtner, N.Malyszek, B.Navejas, S.Donthula, H.Liu, L.Bassett, N.Starkey, K.Boyles, J.Braun</i>	CU
1:56	P-04: The Spiderman Effect: Spidey Sense - <i>R.Phillips, H.Archibeque</i>	PCC
2:08	P-05: Digi-Droids Robotics Challenge - <i>A.Gallardo, S.Anfield, A.Smith, I.Gelo, S.Lamsal</i>	CCA
2:20	P-06: Biodiversity in Antibiotic-Resistant Microbes with Grazing and Non-grazing Soil - <i>A.Johnson, M.Saisan, S.Vaughn</i>	ACC

Group 2

1:20	P-07: Inclusive Lunar Exploration: The Great Lunar Expedition for Everyone and the Power of Student Engagement - <i>E.Hopson, A.Pool, N.Sathiyan</i>	CU
1:32	P-08: H.E.R.B.E.R.T. - Habitat Exploration Rover Built for Extraterrestrial Research and Terrain - <i>K.McGuire, J.Auman, E.Sanderson, N.Wood</i>	CSU
1:44	P-09: Structural Innovation for Lunar Exploration: The Housing and Deployment Module for the Great Lunar Expedition and Everyone - <i>N.Mueller, N.Burger, A.Fitzgerald</i>	CU
1:56	P-10: High Altitude Ozone Depletion Refrigerant Analysis - <i>C.Borror, C.Harrison, D.Porter, A.Russ, K.Stathopoulos, M.Villasuso</i>	ACC
2:08	P-11: Star Tracker: The Journey for Intelligent Navigation - <i>D.Saenz, L.Bennett, A.Piscitella, S.Gomez</i>	RRCC
2:20	P-12: The FRCC Nostromo - <i>S.Voth, G.Wurtsbaugh, R.Bartell, S.Štimac-Knudsen</i>	FRCC

Group 3

1:20	P-13: Biologically Inspired Movement: Exploring Robotics Snake Locomotion - <i>J.Rodriguez, M.Semak</i>	UNC
1:32	P-14: Next-Generation Wearable Workshop: A Smart Glove Approach to Controlling Robots - <i>A.Makuch, T.Suxe, S.Song, A.Cisneros</i>	CU
1:44	P-16: The Effects of Wildfires on Soil Microbiome Diversity - <i>R.Labit, A.Smith, D.Hirsch</i>	CCA
1:56	P-17: Sustainable Solar Powered Radiosonde - <i>B.Pritchard, J.Fitzpatrick, P.Mertens, W.Taylor</i>	FRCC
2:08	P-18: The FrogBot - <i>S.Padilla, R.Marlett</i>	PCC



Group 4:

1:20	P-19 Ram Launch Initiative - <i>T.Hayes, L.Meecker-Gordon, M.Martinez, R.Duffens, S.McGalliard, N.Bauchat, A.LiPuma, J.Schimmels, P.Sherry, B.Golgart, T.Knutson, N.Mauck</i>	CSU
1:32	P-21: Imaging the Lower Corona of the Sun during the April 8th, 2024 Total Solar Eclipse - <i>E.McCartney, D.Mendoza, M.Lazarova</i>	UNC
1:44	P-22: Lights, Camera, Action: Advancing Safety Using Wearable Technology in Low-Light Environments - <i>H.Choi, M.GonzalesRios, R.Aguilar</i>	ACC
1:56	P-23: The Effects of Soil Saturation on Soil Microbiome Diversity - <i>G.Guidry, T.Shultz, A.Lewis, L.Richardson</i>	ACC
2:08	P-24: Robotics Club, Rover Challenge 2024 - <i>J.Ramos, D.Larmor, K.Cross</i>	CCD

Group 5:

1:20	P-25: Examining Unipedal Quiet Stance: Resolving Temporal Scaling using a Binary Record of the Jerk - <i>T.Apala, A.Kaye, M.Semak</i>	UNC
1:32	P-26: The Bogie Team: Autonomous Navigation of Rover Challenge - <i>A.Stefka, N.Hagemann, S.C.Miranda, Z.Klimowicz</i>	CSU
1:44	P-27: Developing Biomimetic, Environment-Friendly Porphyrin Photocatalysts through Amino Acid Coupling - <i>A.Ly, J.Johnson, A.Behmer, H.Neyer, V.BecerraValdez,</i>	ACC
1:56	P-28: Rover ³ - <i>L.Varos, P.Terrell-Hefty, J.Padilla</i>	PCC
2:08	P-29: LoRaWAN Wireless Communication System for the Great Lunar Expedition for Everyone - <i>A.Shrestha, M.Pina, S.Song, S.Venkatesan, D.Norman</i>	CU
2:20	P-30: ARM - Autonomous Rover on Mars - <i>B.Lee, W.Jolley, G.Kallberg, M.Martinez, Q.Patterson, L.Stolf, J.Tice, L.Ward</i>	CU

Group 6:

1:20	P-31: The Effects of Microplastics on Soil Microbiome - <i>B.Brown, C.Unsoy, L.Kopeck</i>	ACC
1:32	P-32: L-Cube - <i>J.Essler, T.Benham, L.Mros, J.Tuttle</i>	UCCS
1:44	P-33: Hunk o'Junk: Circular Economy - <i>N.Oehmen, K. Allett-Jaquez, P.Kurerski</i>	PCC
1:56	P-34: A Journey through Robot Construction with Object Tracking - <i>E.Garneau</i>	UNC
2:08	P-35: Cool Beans: Effectiveness of Gibberellic Acid on Plant Germination After High Altitude Flight - <i>P.Gregg</i>	RRCC
2:20	P-36: MONOLITH - <i>P.Austin, J.Mandel, JMcHale, G.McKay, R.Patel, O.Todd</i>	CU

Virtual Group:

1:40	VP-01: Development of a MIG-Adapted Metal Additive Manufacturing Machine - <i>J.Lyon, R.Burdi</i>	CMU
1:52	P-15: Mock Rover - <i>E.Teel, A.Jackson, J. Thomas</i>	CMU
2:04	P-20: Techno-Mech-Catticus - <i>J.Thompson, C.McHerron</i>	CMU

Participating COSGC Institutions:

Arapahoe Community College (ACC) ★ Colorado Mesa University (CMU)
Colorado State University (CSU) ★ Community College of Aurora (CCA)
Front Range Community College (FRCC)
Pueblo Community College (PCC) ★ Red Rocks Community College (RRCC)
Trinidad State College (TSC) ★ University of Colorado Boulder (CU)
University of Colorado Colorado Springs (UCCS) ★ University of Northern Colorado (UNC)

Huge thank you to all judges...

Mark Abshire
Victor Andersen
Ted Archuleta
Andrew Berg
Kim Buchanan
Caleb Christenson
Verónica Corral Flores
Ray Garcia
Bernadette Garcia Galvez
Rebecca Gilbert
Mary Hanson
Corey Huffman
Lee Jasper
Tommy Kisylia

Kerry Lowery
Patrick Markus
Rees McNally
Denise Meeks
Christy Predaina
John Ringler
Brian Sanders
David Schlichting
Barbra Sobhani
Jacob Toman-Ibarra
Brienne Treffner
Becky Vigil
Whit Whittall
Malcolm Young

Judges' Affiliations: Sierra Space, CSU Ft. Collins, BAE Systems, Impulse Space, Southwest Research Institute, Zynex Monitoring Solutions, Jet Propulsion Laboratory, Nanoracks/Voyager Space, Colorado Space Grant Consortium, Redwire Space, San Isabel Electric Association, Areté, Lockheed Martin, Northrop Grumman, Engineering Analytics, Inc., Space Dynamics Laboratory, University of Colorado Boulder

...and to our sponsors

Jason Baugher
Christy Predaina
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Redwire Space
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