1
00:00:04,470 --> 00:00:02,470
my name is abigail ryan and i work on

2
00:00:13,910 --> 00:00:04,480
integrated lox methane technologies at

3
00:00:17,590 --> 00:00:15,910
i work on solid oxide fuel cells which

4
00:00:19,670 --> 00:00:17,600
are a power source that take oxygen and

5
00:00:21,269 --> 00:00:19,680
methane and create power and water we'll

6
00:00:23,750 --> 00:00:21,279
be using these fuel cells on our journey

7
00:00:25,269 --> 00:00:23,760
to mars as a lander power source to land

8
00:00:27,189 --> 00:00:25,279
on the surface

9
00:00:28,710 --> 00:00:27,199
one of the benefits of in-situ resource

10
00:00:30,790 --> 00:00:28,720
utilization is that we'll be able to

11
00:00:32,069 --> 00:00:30,800
make commodities on the surface of mars

12
00:00:33,670 --> 00:00:32,079
that we need to complete our journey

13
00:00:35,430 --> 00:00:33,680

there such as the propellants that we

14
00:00:37,030 --> 00:00:35,440
can use to lift off from mars in our

15
00:00:38,229 --> 00:00:37,040
ascent vehicle

16
00:00:39,990 --> 00:00:38,239
right now our group is looking at

17
00:00:41,430 --> 00:00:40,000
demonstrating integration of multiple

18
00:00:43,590 --> 00:00:41,440
technologies and using common

19
00:00:45,750 --> 00:00:43,600
commodities across power propulsion and

20
00:00:47,670 --> 00:00:45,760
isru systems this is going to be really

21
00:00:49,910 --> 00:00:47,680
important for mars where we're not going

22
00:00:52,549 --> 00:00:49,920
to want one spare that only works for

23
00:00:54,229 --> 00:00:52,559
one technology but common components

24
00:00:56,150 --> 00:00:54,239
across multiple technologies that are

25
00:00:57,670 --> 00:00:56,160
using similar fluids they'll be easier

26
00:00:59,590 --> 00:00:57,680
to fix and we won't have to send as many

27
00:01:00,709 --> 00:00:59,600
spare parts with us on mars we're not

28
00:01:02,869 --> 00:01:00,719
going to be able to have our own fuel

29
00:01:04,149 --> 00:01:02,879
cell tanks just for us it's way too much

30
00:01:06,469 --> 00:01:04,159
weight and volume to bring all the way

31
00:01:08,310 --> 00:01:06,479
to mars so the more that we can share

32
00:01:10,230 --> 00:01:08,320
components across multiple subsystems