



KATE RUBINS

SCIENTIST IN SPACE

1
00:00:04,230 --> 00:00:03,030
i think it's just an incredible honor

2
00:00:06,230 --> 00:00:04,240
every day when i wake up that i'm

3
00:00:08,629 --> 00:00:06,240
working for nasa so

4
00:00:09,990 --> 00:00:08,639
i'm gonna just lay my nerd cards out on

5
00:00:10,870 --> 00:00:10,000
the table what i'm really looking

6
00:00:12,390 --> 00:00:10,880
forward to

7
00:00:14,549 --> 00:00:12,400
is just seeing all the new and different

8
00:00:15,749 --> 00:00:14,559
experiments it's been four years since

9
00:00:17,349 --> 00:00:15,759
i've been there so

10
00:00:19,429 --> 00:00:17,359
you know telling the program guys give

11
00:00:20,950 --> 00:00:19,439
me more experiments more experiments i'm

12
00:00:29,429 --> 00:00:20,960
looking forward to being as productive

13
00:00:35,430 --> 00:00:31,349

it's really fun to be up here you get to

14

00:00:38,709 --> 00:00:37,110

it's actually really phenomenal it's a

15

00:00:40,389 --> 00:00:38,719

world-class laboratory

16

00:00:42,310 --> 00:00:40,399

and it's an absolutely packed one i

17

00:00:44,150 --> 00:00:42,320

think it's like taking an entire

18

00:00:44,950 --> 00:00:44,160

university campus a world-class

19

00:00:46,470 --> 00:00:44,960

university

20

00:00:48,950 --> 00:00:46,480

and shrinking it down to the size of the

21

00:00:50,790 --> 00:00:48,960

space station there's about 200

22

00:00:53,350 --> 00:00:50,800

experiments on any given

23

00:00:54,950 --> 00:00:53,360

mission and it's pretty fun to be able

24

00:00:56,549 --> 00:00:54,960

to do them all

25

00:00:58,150 --> 00:00:56,559

and station for kate what would you

26

00:01:02,310 --> 00:00:58,160

think about loading the

27

00:01:06,710 --> 00:01:02,320

up and the lower whale on this last row

28

00:01:07,910 --> 00:01:06,720

let's do it it is more complex up here

29

00:01:10,550 --> 00:01:07,920

to do things like

30

00:01:11,590 --> 00:01:10,560

molecular biology and so some of the

31

00:01:14,149 --> 00:01:11,600

time we are just

32

00:01:16,390 --> 00:01:14,159

inventing how to do lab work it took

33

00:01:20,070 --> 00:01:16,400

about 10 gentle shakes

34

00:01:21,350 --> 00:01:20,080

with this kind of motion to get full rna

35

00:01:24,230 --> 00:01:21,360

reader distribution

36

00:01:24,870 --> 00:01:24,240

and none of those mixing lines copy that

37

00:01:27,109 --> 00:01:24,880

and we

38

00:01:29,190 --> 00:01:27,119

like what you saw and are doing this is

39
00:01:32,469 --> 00:01:29,200
why we can't automate things and we need

40
00:01:35,670 --> 00:01:33,510
i think one of the best things about

41
00:01:37,109 --> 00:01:35,680
being in space is that it surprises you

42
00:01:39,109 --> 00:01:37,119
every time you you think you know what

43
00:01:43,030 --> 00:01:39,119
it's going to be like up here and

44
00:01:47,510 --> 00:01:45,429
in space i get to see everything from

45
00:01:49,910 --> 00:01:47,520
physics to material science to

46
00:01:52,389 --> 00:01:49,920
biology it's just this incredible sense

47
00:01:54,389 --> 00:01:52,399
of wonder and joy

48
00:01:56,310 --> 00:01:54,399
we're increasing our complexities double

49
00:01:56,870 --> 00:01:56,320
time today appreciate the patience this

50
00:01:59,350 --> 00:01:56,880
is awesome

51
00:02:01,270 --> 00:01:59,360
that's no problem i flew my crewmate uh

52
00:02:02,789 --> 00:02:01,280
ike around on the robotic arm on an eva

53
00:02:04,230 --> 00:02:02,799
not that many days ago so i sure

54
00:02:06,069 --> 00:02:04,240
understand what it takes to

55
00:02:06,380 --> 00:02:06,079
set up in the robotic commanding i feel

56
00:02:07,670 --> 00:02:06,390
you

57
00:02:09,669 --> 00:02:07,680
[Music]

58
00:02:11,750 --> 00:02:09,679
we're trying to take a census of which

59
00:02:13,270 --> 00:02:11,760
microbes are on space station so we're

60
00:02:14,949 --> 00:02:13,280
working on a comprehensive sequence

61
00:02:16,869 --> 00:02:14,959
based map of the space station we're

62
00:02:17,589 --> 00:02:16,879
taking about a thousand samples total

63
00:02:19,910 --> 00:02:17,599

and so

64

00:02:21,910 --> 00:02:19,920

i'm very carefully swabbing all of the

65

00:02:23,510 --> 00:02:21,920

modules everybody floats by and says

66

00:02:25,110 --> 00:02:23,520

kate are you still swabbing and i'm like

67

00:02:28,309 --> 00:02:25,120

yep

68

00:02:29,910 --> 00:02:28,319

a thousand samples is a lot we trust you

69

00:02:31,130 --> 00:02:29,920

that you're doing your very very best

70

00:02:34,949 --> 00:02:31,140

and we appreciate it

71

00:02:36,949 --> 00:02:34,959

[Music]

72

00:02:39,270 --> 00:02:36,959

this is our home we even see it on

73

00:02:40,790 --> 00:02:39,280

videos sometimes when we go back and i

74

00:02:43,430 --> 00:02:40,800

look at it and i think wow that's

75

00:02:45,350 --> 00:02:43,440

i this i feel like this is my home but

76
00:02:46,309 --> 00:02:45,360
certainly the planet is home as well and

77
00:02:47,910 --> 00:02:46,319
i'm going to always

78
00:02:49,880 --> 00:02:47,920
try to keep that in the forefront of my

79
00:02:52,869 --> 00:02:49,890
mind and appreciate that

80
00:02:55,430 --> 00:02:52,879
[Music]

81
00:02:57,350 --> 00:02:55,440
kate we thank you for continuing to push

82
00:02:58,949 --> 00:02:57,360
space science through your work on board

83
00:03:00,470 --> 00:02:58,959
and through all you do to socialize and

84
00:03:02,149 --> 00:03:00,480
emphasize the importance of molecular

85
00:03:05,110 --> 00:03:02,159
biology in space

86
00:03:06,710 --> 00:03:05,120
it's really really really fun to uh be

87
00:03:07,030 --> 00:03:06,720
at the pointy end of this sphere here

88
00:03:10,390 --> 00:03:07,040

and

89

00:03:12,070 --> 00:03:10,400

in space

90

00:03:13,910 --> 00:03:12,080

so i'm very excited about this and i

91

00:03:16,229 --> 00:03:13,920

can't wait until we're sequencing

92

00:03:18,309 --> 00:03:16,239

multiplexing 96 well plates and swabbing

93

00:03:20,140 --> 00:03:18,319

everything on the space station

94

00:03:24,789 --> 00:03:20,150

that's where we're headed next

95

00:03:27,190 --> 00:03:24,799

[Music]

96

00:03:28,630 --> 00:03:27,200

there's a lot going on up here and i

97

00:03:29,990 --> 00:03:28,640

really do think that science is an

98

00:03:30,710 --> 00:03:30,000

incredible career whether you're doing

99

00:03:32,229 --> 00:03:30,720

it in space

100

00:03:33,990 --> 00:03:32,239

or on the ground if people are

101

00:03:36,390 --> 00:03:34,000

interested in this

102

00:03:37,990 --> 00:03:36,400

the pleasure and and the gratification

103

00:03:39,670 --> 00:03:38,000

of being a scientist every day