

The image shows the interior of a space station module, densely packed with scientific equipment. A central aisle leads to a large, circular hatchway. On the right side, there is a large, white, box-like piece of equipment. The walls are covered with various cables, pipes, and structural elements. Labels are overlaid on the image to identify specific components.

FURNAC

COMBUSTION INTEG

3D PRINTER

MICROGRAVITY SCIENCE GLOVEBOX

WINDOW

WINDOW OBSERVATIONAL RESEARCH FACILITY

ERS

1
00:00:01,070 --> 00:00:07,069

The International Space Station is the most fantastic vehicles ever built.

2
00:00:07,069 --> 00:00:13,139

It's a one-of-a-kind laboratory orbiting about 250 miles above the earth.

3
00:00:13,139 --> 00:00:17,160

and we perform experiments on International Space Station we can do

4
00:00:17,160 --> 00:00:21,240

science we can do experiments we can learn how to do things out of this world.

5
00:00:21,240 --> 00:00:25,590

And the results will help benefit the people on the ground. Space Station

6
00:00:25,590 --> 00:00:31,050

really provides an opportunity to explore for example say medical

7
00:00:31,050 --> 00:00:35,430

applications. The aging and the osteoporosis and muscle wasting

8
00:00:35,430 --> 00:00:39,680

conditions are greatly accelerated in microgravity. The weightless environment

9
00:00:39,680 --> 00:00:44,840

will give us insights into things like diabetes and maybe even cancer.

10
00:00:44,840 --> 00:00:50,250

Understanding those phenomena allow us to look at how we can improve treatment

11
00:00:50,250 --> 00:00:54,899
of disease here on earth. If we wouldn't
have conducted experiments on the ISS we

12
00:00:54,899 --> 00:00:59,100
wouldn't have known that you could use
cold atmospheric Plasma in such broad

13
00:00:59,100 --> 00:01:03,930
application areas we're now exploring.
One of the most promising results has

14
00:01:03,930 --> 00:01:08,280
been gained by studying a protein
associated with Duchenne muscular

15
00:01:08,280 --> 00:01:14,550
dystrophy. We may be able to slow the disease by half, potentially

16
00:01:14,550 --> 00:01:20,980
doubling that life span of many of these DMD patients.

17
00:01:20,980 --> 00:01:23,910
We provided ISERV imagery for

18
00:01:23,910 --> 00:01:29,040
many many natural disasters including
floods and fires for deforestation or

19
00:01:29,040 --> 00:01:33,900
volcanic eruptions and for earthquakes
so it was really a fantastic example

20
00:01:33,900 --> 00:01:37,290
showing how imagery from the
International Space Station could be

21
00:01:37,290 --> 00:01:41,790
used at these times of dire need.

This is when we realized we had a chance to make

22

00:01:41,790 --> 00:01:45,720

a difference in the world using the same technology that was used by NASA but

23

00:01:45,720 --> 00:01:50,190

apply it in a remote area of a developing country. I think it's it's

24

00:01:50,190 --> 00:01:54,960

made people much more aware of the issues of water quality. That's a very

25

00:01:54,960 --> 00:01:58,260

powerful thing.

Having the HICO on the International Space

26

00:01:58,260 --> 00:02:04,890

Station has been the ideal test bed for our research. We can monitor these water

27

00:02:04,890 --> 00:02:09,869

bodies from space and if we can reduce exposures both the humans and even

28

00:02:09,869 --> 00:02:15,540

animals then we've achieved our goal. And now today we're able to operate the

29

00:02:15,540 --> 00:02:19,530

largest fleet of Earth imaging satellites in human history, and none of

30

00:02:19,530 --> 00:02:22,830

that would have been possible without the International Space Station.

31

00:02:22,830 --> 00:02:27,060

The space station has done so many things

for life on planet Earth. It shows us

32

00:02:27,060 --> 00:02:28,980

what human beings can do working together

33

00:02:28,980 --> 00:02:33,780

it shows the science that we can discover. Over 2,000 experiments have

34

00:02:33,780 --> 00:02:38,880

flown onboard ISS. 170 countries around the world have participated in some

35

00:02:38,880 --> 00:02:43,650

fashion either in the ISS itself or in one of the experiments. Our rate of

36

00:02:43,650 --> 00:02:47,160

research is actually increasing. We're doing more today onboard the space

37

00:02:47,160 --> 00:02:50,790

station for for research than we have ever done before

38

00:02:50,790 --> 00:02:55,080

and that's only going to continue in the future. And so what we're seeing today is

39

00:02:55,080 --> 00:02:59,670

a proliferation of new ideas and new concepts it's almost like it's a

40

00:02:59,670 --> 00:03:04,140

Renaissance of what's happening in space. Buckle up and strap down because this is