



LIVING and
WORKING
IN SPACE

1

00:00:02,909 --> 00:00:06,079

As we look to work and live further out into space

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00:00:06,080 --> 00:00:13,160

it's important to understand how the human body and the biological systems that are on and around us are res

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00:00:13,800 --> 00:00:16,549

Information will allow us to keep astronauts safe and healthy

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00:00:21,750 --> 00:00:26,629

So gene lab is an effort to maximize the reuse of precious spaceflight experiments

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00:00:27,420 --> 00:00:33,079

Gene lab, does this through data system that allows anyone to download and analyze these data sets

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00:00:33,719 --> 00:00:37,459

Spaceflight experiments are unique because the spaceflight environment is unique

7

00:00:38,069 --> 00:00:38,989

for example

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00:00:38,989 --> 00:00:46,428

The long-duration weightlessness we have on the International Space Station and the radiation environment in

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00:00:46,799 --> 00:00:48,799

Duplicate in detail on earth

10

00:00:49,469 --> 00:00:54,768

So if you want to understand the broad question of how biology responds to spaceflight it's really important to s

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00:00:55,350 --> 00:01:01,969

Biological diversity we have data from humans mice fruit flies worms fish squid

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00:01:02,670 --> 00:01:07,009

Microbes and plants. It really runs the gamut of biological diversity

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00:01:09,090 --> 00:01:16,130

What's remarkable about gene lab is the effort to take these very rare precious spaceflight experiments and to

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00:01:16,560 --> 00:01:23,750

The the knowledge that we're getting from from that and we do that through providing the data in a curated fas

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00:01:23,750 --> 00:01:25,320

That's easy to use

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00:01:25,320 --> 00:01:32,419

Putting it in context over their data sets and then bringing a community together to actually analyze that data a

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00:01:35,030 --> 00:01:40,930

Data and gene-lab are important for the Artemis mission and going forward to Mars because they tell us how li

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00:01:41,390 --> 00:01:44,470

respond to spaceflight and you need that information to

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00:01:45,650 --> 00:01:50,679

Keep the crew healthy and performing well, so as we move forward to the moon and on to Mars

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00:01:51,650 --> 00:01:54,009

We're going to need a base of knowledge from which to make