



1  
00:00:00,080 --> 00:00:02,560  
[Music/Airplane taking off]

2  
00:00:02,660 --> 00:00:08,170  
>>SARP is a NASA internship for undergraduate students who are familiar with science and

3  
00:00:08,170 --> 00:00:11,940  
math and engineering but maybe haven't had a chance to do some of these really unique

4  
00:00:11,940 --> 00:00:13,630  
field research experiences.

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00:00:13,630 --> 00:00:17,650  
What really is cool about SARP is it gives students from all over the country a chance

6  
00:00:17,650 --> 00:00:21,630  
to really get up there and experience Earth Science first hand.

7  
00:00:21,630 --> 00:00:25,820  
>>It takes 28 students from around the United States and splits them into four groups, so

8  
00:00:25,820 --> 00:00:28,980  
there's two remote sensing groups and then there's two airborne science groups.

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00:00:28,980 --> 00:00:33,280  
And so the students in their groups conduct individual research projects that the mentors

10  
00:00:33,280 --> 00:00:35,400  
help them with and that the faculty oversee.

11  
00:00:35,400 --> 00:00:36,400  
>>I'm studying earthquakes.

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00:00:36,400 --> 00:00:41,280

There are two specific gases that come out, carbon dioxide and sulfur dioxide.

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00:00:41,280 --> 00:00:44,340

So I'm gonna find out how high those levels are.

14

00:00:44,340 --> 00:00:48,460

>>I'm trying to use ocean remote sensing to see if we can detect plastics in the ocean.

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00:00:48,469 --> 00:00:53,860

>>My purpose is to determine where plants are in specific areas thermally instead of just

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00:00:53,860 --> 00:00:58,399

looking at the spectra, so we can accurately see if the thermal data matches up with the

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00:00:58,399 --> 00:00:59,399

spectra data.

18

00:00:59,399 --> 00:01:04,820

>>We're going to be exploring how some algae in Lake Elsinore produce toxins, how they

19

00:01:04,820 --> 00:01:06,140

aerosolize, and where they end up going.

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00:01:06,140 --> 00:01:10,330

I'll be studying nitrogen compounds, gases, and particulates in the San Joaquin Valley,

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00:01:10,330 --> 00:01:16,360

over 4 million residents live there, and the population is increasing rapidly, and by 2100

22

00:01:16,360 --> 00:01:19,720

the population will increase by like 60%,

so it's really important to understand the

23

00:01:19,720 --> 00:01:21,200

impacts on human health.

24

00:01:21,300 --> 00:01:25,320

[Music/Background noise]

25

00:01:25,500 --> 00:01:29,820

>>With the cloud being white, having higher albedo, you're causing the chemistry to become

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00:01:29,820 --> 00:01:34,740

faster, so you're gonna see an enhancement of aerosol production and chemistry there.

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00:01:34,960 --> 00:01:37,540

[Music/Background noise]

28

00:01:37,620 --> 00:01:42,980

>>When we want to take the sample, we close the outlet and open the can the we're taking the

29

00:01:43,080 --> 00:01:44,280

sample into.

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00:01:44,300 --> 00:01:48,880

And we watch the pump drop down to just above zero hopefully, once the pressure goes up

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00:01:48,880 --> 00:01:52,780

to 35 we close the can and open the outlet again.

32

00:01:52,780 --> 00:01:55,140

And then we'll later test it in the lab.

33

00:01:55,260 --> 00:01:56,760

[Music]

34  
00:01:56,840 --> 00:02:02,140  
>>It's not the typical commercial aircraft,  
it has a lot of experts on the plane, so you're

35  
00:02:02,140 --> 00:02:07,450  
seeing the gases being analyzed as you're  
flying in the aircraft, and you get to explore

36  
00:02:07,450 --> 00:02:11,110  
all the different parts of the plane, and  
participate in the research so it's a great

37  
00:02:11,110 --> 00:02:12,110  
experience.

38  
00:02:12,110 --> 00:02:16,890  
>>I've learned the importance of how to read  
scientific papers and how to get the important

39  
00:02:16,890 --> 00:02:22,180  
information, as well as R and MatLab, which  
are two important computer programs for analyzing

40  
00:02:22,180 --> 00:02:23,180  
data.

41  
00:02:23,180 --> 00:02:26,640  
And all these skills that I'm learning, I'll  
be able to take to either a graduate program

42  
00:02:26,640 --> 00:02:28,670  
or even industry in the next step.

43  
00:02:28,670 --> 00:02:32,610  
>>I'd say the biggest skill is learning how  
to run a project from start to finish, which

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00:02:32,610 --> 00:02:35,230

is gonna be super helpful for graduate school.

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00:02:35,230 --> 00:02:38,430

And all the data analysis that I'm learning,  
I have a feeling I'll definitely use later

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00:02:38,430 --> 00:02:39,560

on no matter what I do.

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00:02:39,560 --> 00:02:45,360

>>Earth sciences affect us every day, and having  
that greater understanding has been invaluable

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00:02:45,360 --> 00:02:50,570

for developing me not only as a scientist  
but also just as an environmentally concerned

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00:02:50,570 --> 00:02:51,570

citizen.

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00:02:51,570 --> 00:02:54,880

>>When else are you gonna get a chance to fly  
on a NASA DC-8 airplane?

51

00:02:54,880 --> 00:02:56,360

And work with the experimenters and gather  
data?