Dr. Pedro [illegible] themselves as guinea pigs to determine criteria for standardization of the probe. The probe was applied to various parts of the body. Tests showed pain thresholds on normal individuals are about the same for similar parts of the body.

Biomedical engineering is a relatively new field centering on the use of electrical instruments as medical tools for research, diagnosis and treatment.

Present research centers on testing persons with altered pain thresholds such as persons taking medication or with serious illnesses. The results of the tests will reveal the effectiveness of certain pain killing drugs or the need for such a drug.

1
00:00:10,160 --> 00:00:15,200
(Noah Petro) I remember, on one of the very first days of my 9th grade Earth Science class,

2
00:00:15,220 --> 00:00:20,310
I had a teacher stand up with a fish tank full of water and he held up a rock

3
00:00:20,330 --> 00:00:25,340
and he held up a piece of wood and he asked the class, "What's going to sink and what's going to float?"

4
00:00:25,360 --> 00:00:29,350
Well, wood's going to float, rock's going to sink, easy, you know, it just makes sense.

5
00:00:29,370 --> 00:00:33,450
He put the rock in, he put the wood in, the wood sank and rock floated and I thought,

6
00:00:33,470 --> 00:00:37,580
my mind was blown, and I thought, "what?!"

7
00:00:37,600 --> 00:00:40,620
And it was essentially from there that everything else in that class was basically your assumptions

8
00:00:40,640 --> 00:00:44,640
can be wrong, you know, mother nature makes trees that sink and rocks that float.

9
00:00:44,660 --> 00:00:48,660
So let's learn why. My jaw just dropped and I thought, well that's, that's what

10
00:00:48,680 --> 00:00:52,760
I want to do. My name is Noah Petro and I study the surface of airless bodies in

11
00:00:52,780 --> 00:00:56,870
the solar system, focusing primarily on the surface of the Moon.

12
00:00:56,890 --> 00:01:00,960
(music kicks up)

13
00:01:03,070 --> 00:01:07,150

The mission that I've worked most closely with is the Chandrayaan-1 mission

14
00:01:07,170 --> 00:01:11,230
it was an Indian mission to orbit the Moon and I was

15
00:01:11,250 --> 00:01:15,290
working on one of the instruments on that mission called the Moon Mineralogy Mapper. The fun

16
00:01:15,310 --> 00:01:19,350
part comes when you figure out all of the problems and you can understand the limitations of your data

17
00:01:19,370 --> 00:01:23,400
and actually start to look at the geology of the surface of the Moon.

18
00:01:23,420 --> 00:01:28,470
And so what I've been able to do is study parts of the lunar surface that we've never explored

19
00:01:28,490 --> 00:01:33,480
humans have never been, and try to better understand how the Moon has evolved both over billions and billion

20
00:01:33,500 --> 00:01:34,540
of years.

21
00:01:36,620 --> 00:01:39,700
My father was an engineer in the 1960s and worked on the Apollo

22
00:01:39,720 --> 00:01:42,740
project. He build various components for the

23
00:01:42,760 --> 00:01:45,830
lander and for the backpack that the astronauts wore.

24
00:01:45,850 --> 00:01:48,860
So even from an early age, sort of NASA was something

25
00:01:48,880 --> 00:01:51,940
that I was familiar with and kind of

26
00:01:51,960 --> 00:01:54,960
intrigued by. Going on to high school I got very interested in

27
00:01:54,980 --> 00:01:57,990
geology, Earth Science. And

28
00:01:58,010 --> 00:02:01,060
from a very early age in high school thought, "Oh, okay

29
00:02:01,080 --> 00:02:04,080
I want to study rocks, I want to study geology,

30
00:02:04,100 --> 00:02:07,110
I went to college I had a professor there who sort of

31
00:02:07,130 --> 00:02:10,130
said, "Well wait a minute, you like geology and you like space

32
00:02:10,150 --> 00:02:13,210
and planetary, planets, NASA stuff. You know, you can

33
00:02:13,230 --> 00:02:16,220
do the geology of the planets." I thought, "Really?"

34
00:02:16,240 --> 00:02:19,280
"Well that sounds interesting." And so I got very interested in that.

35
00:02:19,300 --> 00:02:22,380
I mean, one of the amazing things that happened to me,

36
00:02:22,400 --> 00:02:25,420
working with this instrument, the Moon Mineralogy Mapper,

37
00:02:25,440 --> 00:02:28,500
you know, we had this discovery of water on the Moon.

38
00:02:28,520 --> 00:02:31,540

And our instrument

39
00:02:31,560 --> 00:02:34,620
along with two other instruments that had passed by the Moon

40
00:02:34,640 --> 00:02:37,630
found traces, evidence for traces

41
00:02:37,650 --> 00:02:40,670
of water on the surface of the Moon. And to be, sort of in the wings

42
00:02:40,690 --> 00:02:43,780
and associated with this pretty fundamental and pretty exciting

43
00:02:43,800 --> 00:02:46,820
discovery, it was amazing. My whole family thinks that I

44
00:02:46,840 --> 00:02:49,930
have something to do with everything that NASA does, and

45
00:02:49,950 --> 00:02:52,960
no, not really, but still for me, that's a big sense of

46
00:02:52,980 --> 00:02:56,030
pride that like, hey, we do that.

47
00:02:56,050 --> 00:02:59,060
We send humans into space, or we send spacecraft to other

48
00:02:59,080 --> 00:03:02,110
planets, or we have rovers moving around on Mars,

49
00:03:02,130 --> 00:03:05,210
we do that. I've been very fortunate that

50
00:03:05,230 --> 00:03:08,250
my passions, the things that I enjoy, and

51
00:03:08,270 --> 00:03:11,340
what I do professionally, overlap quite a bit.

52
00:03:11,360 --> 00:03:14,380
So that's the best anyone

53
00:03:14,400 --> 00:03:16,390
could ask for.