



1
00:00:00,246 --> 00:00:04,296
>> About 8 or 9 years ago, our
team here was developing tires

2
00:00:04,366 --> 00:00:06,656
for future, big lunar rovers.

3
00:00:06,776 --> 00:00:09,266
Thinking like a lunar
Winnebago type -- type vehicle.

4
00:00:09,306 --> 00:00:11,026
So something that would
support a lot of load.

5
00:00:11,446 --> 00:00:14,856
And we realized that NASA needed
better tires to do that work,

6
00:00:14,886 --> 00:00:15,536
and so that's how we come

7
00:00:15,536 --> 00:00:17,236
up with what we now
call the spring tire.

8
00:00:17,706 --> 00:00:20,016
At the time, we had no
material scientist on our team,

9
00:00:20,016 --> 00:00:22,206
we were just using spring steel
because that's what was used

10
00:00:22,256 --> 00:00:25,646
in the past, and so we had
made several prototypes,

11
00:00:26,096 --> 00:00:28,836

they performed great in sand, they got good traction,

12

00:00:28,946 --> 00:00:31,606

can carry a lot of load, but we always came

13

00:00:31,606 --> 00:00:35,766

across this one problem of where the tires would undergo

14

00:00:35,856 --> 00:00:36,926

plastic deformation.

15

00:00:36,926 --> 00:00:40,186

They would get dense when you load them up too -- too much.

16

00:00:40,436 --> 00:00:42,956

We were struggling to find a solution to fix that problem,

17

00:00:43,466 --> 00:00:47,446

and then probably about 4 or 5 years ago, I just...

18

00:00:47,446 --> 00:00:50,476

>> I just happened to be over in the building here,

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00:00:50,476 --> 00:00:53,656

where the Slope lab is, and I was over here

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00:00:53,656 --> 00:00:56,086

for a different meeting for the work that I do

21

00:00:56,086 --> 00:01:00,736

in shape memory alloys, and

I ran into Colin in the hall,

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00:01:00,736 --> 00:01:03,036
and I was like, what are you
doing back and why aren't you

23

00:01:03,036 --> 00:01:04,256
over in the impact lab?

24

00:01:04,866 --> 00:01:07,666
Because I knew him
as a -- as a student.

25

00:01:07,666 --> 00:01:09,726
He said, well, I've
graduated, and I've been working

26

00:01:09,726 --> 00:01:11,096
out here full-time for a while.

27

00:01:11,096 --> 00:01:12,426
I'm like, really,
where do you work?

28

00:01:13,196 --> 00:01:14,606
And he said, I work in Slope.

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00:01:14,606 --> 00:01:16,716
And I said, you know, I've
been here for over 10 years,

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00:01:16,746 --> 00:01:19,146
and I hear about this Slope
place, but I've never been it.

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00:01:19,146 --> 00:01:21,846
And he said, well, if you
have a minute, you know,

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00:01:21,846 --> 00:01:22,726
I'll take you in there.

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00:01:22,726 --> 00:01:26,236
And so we came into the
lab, and as soon as I --

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00:01:26,236 --> 00:01:31,166
we walked in, I saw the tires,
and I looked at them and I said

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00:01:31,196 --> 00:01:33,126
to him, I said, aren't
you having a problem

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00:01:33,426 --> 00:01:34,836
with plastic deformation
in this?

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00:01:34,836 --> 00:01:38,776
And he smiled like he is
right now, and he said, yeah,

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00:01:38,776 --> 00:01:40,326
and I said, I have
your solution.

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00:01:40,956 --> 00:01:42,996
>> Yeah. I had never
even heard the term,

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00:01:42,996 --> 00:01:44,096
shape memory alloys before,

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00:01:44,096 --> 00:01:45,926
but I knew he was a
materials science engineer,

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00:01:45,976 --> 00:01:48,326
but I had no idea he was

working on that, and so,

43

00:01:48,826 --> 00:01:50,546

since then we've
been collaborating

44

00:01:50,586 --> 00:01:54,096

on these tires using
his material expertise,

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00:01:54,196 --> 00:01:55,286

especially in shape
memory alloys,

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00:01:55,366 --> 00:01:58,176

to come up with this new tire
that we think is really going

47

00:01:58,176 --> 00:02:01,156

to revolutionize
planetary rover tires