



1  
00:00:00,210 --> 00:00:02,623  
Hi, I'm Dr. E., Ellen Stofan.

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00:00:02,623 --> 00:00:05,420  
And Dr. Z., Dr. Thomas Zurbuchen and I,

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00:00:05,420 --> 00:00:07,929  
would like to answer  
some of your questions.

4  
00:00:07,929 --> 00:00:11,262  
(soft electronic music)

5  
00:00:14,628 --> 00:00:16,190  
We got a question,

6  
00:00:16,190 --> 00:00:18,790  
which I think you and I  
only have one answer to.

7  
00:00:18,790 --> 00:00:20,947  
It says, "What should I study

8  
00:00:20,947 --> 00:00:23,410  
"in the field of space science?"

9  
00:00:23,410 --> 00:00:24,720  
and "Why should you study it?"

10  
00:00:24,720 --> 00:00:26,900  
And you and I have different reasons,

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00:00:26,900 --> 00:00:28,780  
so I'm curious to hear yours.

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00:00:28,780 --> 00:00:31,300  
- So, first of all, should  
you study space science?

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00:00:31,300 --> 00:00:32,200

Absolutely!

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00:00:32,200 --> 00:00:34,160

It's a great subject area,

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00:00:34,160 --> 00:00:36,430

and there's many different  
ways you can get into it.

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00:00:36,430 --> 00:00:38,820

I actually believe the two of  
us have a different degree;

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00:00:38,820 --> 00:00:40,900

mine is a PhD in astrophysics.

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00:00:40,900 --> 00:00:42,150

There's others that I know

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00:00:42,150 --> 00:00:44,316

that went through  
engineering and so forth.

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00:00:44,316 --> 00:00:47,210

And for me, what's really interesting is,

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00:00:47,210 --> 00:00:49,920

as we build teams, these resilient teams

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00:00:49,920 --> 00:00:51,430

that make these missions happen,

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00:00:51,430 --> 00:00:55,165

it takes many of us with  
different backgrounds coming in.

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00:00:55,165 --> 00:00:59,560

And study whatever it is that  
you're most excited about.

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00:00:59,560 --> 00:01:01,030

For me, that was astrophysics,

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00:01:01,030 --> 00:01:02,370

and I'm really glad I did that.

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00:01:02,370 --> 00:01:03,920

I focused on the sun.

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00:01:03,920 --> 00:01:05,920

But you studied something else, right?

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00:01:05,920 --> 00:01:07,781

- Yeah, I studied planetary geology.

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00:01:07,781 --> 00:01:09,810

And this question was one of the reasons

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00:01:09,810 --> 00:01:12,351

I wore my Cassini-Huygens shirt today.

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00:01:12,351 --> 00:01:14,340

I worked on the Cassini mission,

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00:01:14,340 --> 00:01:16,908

looking at one of Saturn's  
moons, called Titan.

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00:01:16,908 --> 00:01:20,260

And we had people who were geologists,

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00:01:20,260 --> 00:01:21,905

people who studied the atmospheres.

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00:01:21,905 --> 00:01:24,580

We had people who studied  
the rings of Saturn.

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00:01:24,580 --> 00:01:26,938

We had people looking at the solar wind

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00:01:26,938 --> 00:01:28,730

out in the vicinity.

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00:01:28,730 --> 00:01:30,150

So you had all these people

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00:01:30,150 --> 00:01:32,430

from all these different disciplines,

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00:01:32,430 --> 00:01:34,580

and we were all space scientists

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00:01:34,580 --> 00:01:35,970

and all working together

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00:01:35,970 --> 00:01:37,998

to really try to understand Saturn

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00:01:37,998 --> 00:01:40,020

and its crazy system of moons.

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00:01:40,020 --> 00:01:43,410

So, to me, it's the best  
field because it's fun.

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00:01:43,410 --> 00:01:45,630

There's so much to figure out.

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00:01:45,630 --> 00:01:47,110

And with data coming in

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00:01:47,110 --> 00:01:48,900  
from new telescopes, like James Webb,

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00:01:48,900 --> 00:01:50,740  
we're never gonna be short of puzzles

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00:01:50,740 --> 00:01:52,406  
for people to be working on.

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00:01:52,406 --> 00:01:54,170  
- So, I wanna ask one more question;

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00:01:54,170 --> 00:01:56,050  
I'm really curious the answer.

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00:01:56,050 --> 00:01:58,360  
And it's really about you personally.

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00:01:58,360 --> 00:02:00,980  
What obstacles did you  
encounter as a woman

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00:02:00,980 --> 00:02:02,754  
in your career as a scientist,

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00:02:02,754 --> 00:02:05,039  
as an administrator, first at NASA,

57  
00:02:05,039 --> 00:02:06,860  
now at the Smithsonian,

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00:02:06,860 --> 00:02:10,310  
and especially as a little  
girl curious about science?

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00:02:10,310 --> 00:02:11,455  
How did you overcome it,

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00:02:11,455 --> 00:02:13,960  
and who helped you along the way?

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00:02:13,960 --> 00:02:16,210  
- Well, I look back to my  
own personal experience

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00:02:16,210 --> 00:02:18,617  
and say, "Well, how did I as  
a young girl get involved,

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00:02:18,617 --> 00:02:20,134  
when so few girls did?"

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00:02:20,134 --> 00:02:22,180  
One of the things I really think about,

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00:02:22,180 --> 00:02:25,130  
the fact that I had parents  
who hugely supported me.

66  
00:02:25,130 --> 00:02:27,692  
I had teachers who hugely supported me.

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00:02:27,692 --> 00:02:30,870  
And it wasn't till later in my career

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00:02:30,870 --> 00:02:33,018  
where I encountered obstacles

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00:02:33,018 --> 00:02:34,990  
and a lot of men who clearly thought

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00:02:34,990 --> 00:02:37,440  
I really didn't belong in the room.

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00:02:37,440 --> 00:02:40,330  
I got called little girl  
after I'd had a child,

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00:02:40,330 --> 00:02:42,360

by someone who actually worked for me.

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00:02:42,360 --> 00:02:45,530

I did eventually encounter  
that kind of treatment,

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00:02:45,530 --> 00:02:46,760

but by the time I did,

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00:02:46,760 --> 00:02:48,987

I was a lot further on in my career.

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00:02:48,987 --> 00:02:50,790

So I really think about,

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00:02:50,790 --> 00:02:53,631

how can we better support kids

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00:02:53,631 --> 00:02:55,920

who may not have that support network

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00:02:55,920 --> 00:02:57,560

of teachers and parents?

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00:02:57,560 --> 00:02:59,820

How do we as the science community

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00:02:59,820 --> 00:03:00,940

really reach out to kids

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00:03:00,940 --> 00:03:03,229

and say, "You know,  
science is a great field."

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00:03:03,229 --> 00:03:05,010

The other thing I really think about,

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00:03:05,010 --> 00:03:06,600

and it's something I work on a lot

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00:03:06,600 --> 00:03:07,627

at the Air and Space Museum,

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00:03:07,627 --> 00:03:09,010

is, when I was a kid,

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00:03:09,010 --> 00:03:11,020

I'd look for women role models.

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00:03:11,020 --> 00:03:14,727

I'd look for "Oh, were there  
women out there in science

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00:03:14,727 --> 00:03:16,470

doing cool things?"

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00:03:16,470 --> 00:03:20,104

And I would find  
biographies of Marie Curie,

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00:03:20,104 --> 00:03:21,540

and that was about it.

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00:03:21,540 --> 00:03:23,990

And I loved reading  
stories about Mary Leakey

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00:03:23,990 --> 00:03:26,560

discovering the origins  
of life off in Africa.

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00:03:26,560 --> 00:03:28,970

So I really looked for  
those women role models,

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00:03:28,970 --> 00:03:31,030

and they were so hard to find.

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00:03:31,030 --> 00:03:34,890

So as we reimagine the  
National Air and Space Museum,

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00:03:34,890 --> 00:03:36,624

as we're redoing all the galleries,

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00:03:36,624 --> 00:03:40,100

I really think about, "Whose  
stories are we telling?"

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00:03:40,100 --> 00:03:42,617

and "Are we telling  
stories so that every kid,

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00:03:42,617 --> 00:03:44,527

"no matter what they look like,

101

00:03:44,527 --> 00:03:45,967

"when they come in the museum,

102

00:03:45,967 --> 00:03:48,559

"they understand that people  
who look just like them

103

00:03:48,559 --> 00:03:52,145

"have been here all along  
doing amazing things

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00:03:52,145 --> 00:03:54,559

"in science and technology?"

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00:03:54,559 --> 00:03:56,950

Because we have to broaden out our fields.

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00:03:56,950 --> 00:03:58,740

We have to make everyone feel welcome

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00:03:58,740 --> 00:04:00,740

or else we're not tapping into the talent

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00:04:00,740 --> 00:04:02,308

of all of our population.

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00:04:02,308 --> 00:04:03,630

- Well, I really wanna thank you

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00:04:03,630 --> 00:04:06,290

for being a role model yourself.

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00:04:06,290 --> 00:04:09,405

I remember introducing you to my daughter,

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00:04:09,405 --> 00:04:12,410

and, you know, kind of the  
Director of the Smithsonian,

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00:04:12,410 --> 00:04:14,340

and of course, this  
distinguished scientist.

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00:04:14,340 --> 00:04:15,760

What a role model you have been.

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00:04:15,760 --> 00:04:16,668

And thanks for that.

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00:04:16,668 --> 00:04:18,970

You persevered and pushed through.

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00:04:18,970 --> 00:04:21,320

And there's challenges ahead of us.

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00:04:21,320 --> 00:04:22,540

And I really wanna thank you

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00:04:22,540 --> 00:04:24,768

for being just a role model for so many.

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00:04:24,768 --> 00:04:25,950

- Thanks so much!

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00:04:25,950 --> 00:04:27,380

This has been really fun.

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00:04:27,380 --> 00:04:29,300

And I can't wait to do our next episode