



1  
00:00:00,269 --> 00:00:02,936  
(gentle music)

2  
00:00:06,260 --> 00:00:10,250  
- My name is Thomas Zurbuchen,  
also known as Dr. Z.

3  
00:00:10,250 --> 00:00:13,410  
- And I'm Ellen Stofan,  
also known as Dr. E.

4  
00:00:13,410 --> 00:00:16,970  
Welcome to another  
episode of "E.Z. Science."

5  
00:00:16,970 --> 00:00:17,803  
So we're here at

6  
00:00:17,803 --> 00:00:20,140  
the Smithsonian's National  
Air and Space Museum.

7  
00:00:20,140 --> 00:00:23,330  
And this is an amazing exhibit  
that I'm so excited about.

8  
00:00:23,330 --> 00:00:25,820  
It's called If Then She Can,

9  
00:00:25,820 --> 00:00:29,760  
which is all about if you can  
see it, you can believe it,

10  
00:00:29,760 --> 00:00:32,090  
and we want girls to know they can.

11  
00:00:32,090 --> 00:00:35,520  
They can become scientists,  
engineers, and technologists.

12

00:00:35,520 --> 00:00:40,520

We have 120 3D printed  
orange plastic statues

13

00:00:41,660 --> 00:00:45,010

all of women who are currently  
right now changing the world

14

00:00:45,010 --> 00:00:47,640

in science, technology,  
engineering, and math.

15

00:00:47,640 --> 00:00:50,140

It's the largest group of statues

16

00:00:50,140 --> 00:00:51,800

of women ever brought together

17

00:00:51,800 --> 00:00:53,810

by the Lyda Hill Philanthropies.

18

00:00:53,810 --> 00:00:56,900

But what is really important  
to me is in the few weeks

19

00:00:56,900 --> 00:00:58,610

we've had this at the Smithsonian,

20

00:00:58,610 --> 00:01:02,060

we've had many of the women  
who these are statue of

21

00:01:02,060 --> 00:01:03,490

here with us.

22

00:01:03,490 --> 00:01:05,220

- And I had an opportunity to speak

23

00:01:05,220 --> 00:01:09,520

with Dr. Kelly Korreck today,  
who I know for over 20 years

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00:01:09,520 --> 00:01:13,190

because 17 years ago or so  
she graduated with a doctorate

25

00:01:13,190 --> 00:01:15,060

and I happened to be the PhD advisor.

26

00:01:15,060 --> 00:01:18,010

And I followed her career  
from the Smithsonian.

27

00:01:18,010 --> 00:01:20,323

She's currently working  
at NASA Headquarters.

28

00:01:21,170 --> 00:01:23,360

Hey Kelly, it's just  
wonderful to see you here.

29

00:01:23,360 --> 00:01:24,930

And you being honored,

30

00:01:24,930 --> 00:01:27,890

one of the statues that we're looking at,

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00:01:27,890 --> 00:01:32,160

you were a student of mine  
and graduated 17 years ago

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00:01:32,160 --> 00:01:33,240

with a doctorate.

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00:01:33,240 --> 00:01:35,140

What happen since then, Kelly?

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00:01:35,140 --> 00:01:36,300

- Well, thank you so much, Thomas.

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00:01:36,300 --> 00:01:38,980

Yeah, the last 17 years  
has been so exciting,

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00:01:38,980 --> 00:01:40,800

done a variety of things.

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00:01:40,800 --> 00:01:43,140

Went, first of all, to the  
Center for Astrophysics,

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00:01:43,140 --> 00:01:44,750

the Smithsonian Astrophysical Observatory

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00:01:44,750 --> 00:01:47,490

up in Cambridge, Massachusetts,  
where I did a postdoc

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00:01:47,490 --> 00:01:49,760

and studied stars that explode

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00:01:49,760 --> 00:01:51,970

as well as jets coming out of galaxies.

42

00:01:51,970 --> 00:01:54,140

Then moved on to start  
building instruments

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00:01:54,140 --> 00:01:55,550

and focusing on the sun,

44

00:01:55,550 --> 00:01:56,960

which was really one of my first loves

45

00:01:56,960 --> 00:01:59,230

and work I've done with  
you as a graduate student.

46

00:01:59,230 --> 00:02:01,300

I worked on NASA's Parker Solar Probe,

47

00:02:01,300 --> 00:02:02,740

the mission to touch the sun,

48

00:02:02,740 --> 00:02:04,310

and part of that instrument suite

49

00:02:04,310 --> 00:02:06,250

that was able to fly into the corona

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00:02:06,250 --> 00:02:08,510

for the first time last year.

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00:02:08,510 --> 00:02:09,343

- Just wonderful.

52

00:02:09,343 --> 00:02:11,533

So you of course built one  
of the hottest instruments

53

00:02:11,533 --> 00:02:14,220

actually ever built for space research,

54

00:02:14,220 --> 00:02:17,750

an instrument that's on the  
outside of the heat shield.

55

00:02:17,750 --> 00:02:20,040

Tell us what's the most  
important thing you figured out

56

00:02:20,040 --> 00:02:23,482

in your own research that  
relates to that instrument?

57

00:02:23,482 --> 00:02:26,330

- Right, the things that I  
figured out specifically was

58

00:02:26,330 --> 00:02:28,030

to look at coronal mass ejections,

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00:02:28,030 --> 00:02:29,710

or these billions of tons of material,

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00:02:29,710 --> 00:02:31,820

equivalent to 80 million school buses,

61

00:02:31,820 --> 00:02:34,520

racing towards us at  
millions of miles an hour

62

00:02:34,520 --> 00:02:35,660

and how they're different.

63

00:02:35,660 --> 00:02:38,080

And we've saw for the  
first time, the closest,

64

00:02:38,080 --> 00:02:41,950

the birth of these CMEs with  
Parker and how they evolve,

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00:02:41,950 --> 00:02:43,420

and how they are a little different

66

00:02:43,420 --> 00:02:45,100

than what they look like in at Earth.

67

00:02:45,100 --> 00:02:46,190

And so that's why we need to go

68

00:02:46,190 --> 00:02:47,450  
all these different vantage points

69  
00:02:47,450 --> 00:02:49,551  
to really understand space weather.

70  
00:02:49,551 --> 00:02:52,390  
- I have to tell you how  
when I was a grad student

71  
00:02:52,390 --> 00:02:54,790  
and a postdoc, I dreamed of those data.

72  
00:02:54,790 --> 00:02:57,150  
I'm just so proud that you are able

73  
00:02:57,150 --> 00:03:00,150  
to make those first  
observations close to the sun

74  
00:03:00,150 --> 00:03:01,500  
of these amazing phenomena,

75  
00:03:01,500 --> 00:03:03,762  
which of course shape astrophysics.

76  
00:03:03,762 --> 00:03:07,440  
What is your advice to young girls

77  
00:03:07,440 --> 00:03:09,980  
about potential careers in science?

78  
00:03:09,980 --> 00:03:10,970  
- Stay curious.

79  
00:03:10,970 --> 00:03:13,410  
Figure out what problem you wanna solve

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00:03:13,410 --> 00:03:15,400  
and then ask the questions that are going

81  
00:03:15,400 --> 00:03:16,700  
to help you solve that.

82  
00:03:16,700 --> 00:03:19,970  
Work together, find  
someone who inspires you,

83  
00:03:19,970 --> 00:03:21,790  
surround yourself with  
people who are curious

84  
00:03:21,790 --> 00:03:23,970  
and interesting, and  
you'll do great things.

85  
00:03:23,970 --> 00:03:25,750  
- You being honored as  
part of that exhibit,

86  
00:03:25,750 --> 00:03:27,500  
it means just a lot to me personally,

87  
00:03:27,500 --> 00:03:30,660  
because I'm so proud of you,  
of what you have achieved.

88  
00:03:30,660 --> 00:03:31,910  
- Well, thank you so much.

89  
00:03:31,910 --> 00:03:34,491  
- That was such a great  
conversation with Kelly.

90  
00:03:34,491 --> 00:03:37,826  
And earlier I got to  
speak with Dana Bolles.

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00:03:37,826 --> 00:03:41,207

- I know Dana from the  
work that she does at NASA.

92

00:03:41,207 --> 00:03:42,750

And I wanna tell you,

93

00:03:42,750 --> 00:03:45,062

what she's really helping us with is how

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00:03:45,062 --> 00:03:48,420

to communicate science,  
not only individually

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00:03:48,420 --> 00:03:50,640

to young girls and learners of all ages,

96

00:03:50,640 --> 00:03:54,030

but also rebuilding our entire websites

97

00:03:54,030 --> 00:03:57,950

that communicate science to  
large audiences worldwide.

98

00:03:57,950 --> 00:04:00,670

- Dana, I'm so excited  
to have you here today

99

00:04:00,670 --> 00:04:01,760

at the Air and Space Museum,

100

00:04:01,760 --> 00:04:04,350

and I'm so inspired by your statue.

101

00:04:04,350 --> 00:04:06,882

What is it like to see  
yourself in orange plastic?

102

00:04:06,882 --> 00:04:11,130

- Oh, it's really weird.

103

00:04:11,130 --> 00:04:12,090

It's really strange.

104

00:04:12,090 --> 00:04:15,420

I never thought I would  
see a statue of myself,

105

00:04:15,420 --> 00:04:18,200

much less a full scale size one.

106

00:04:18,200 --> 00:04:23,200

And being part of collection  
is just an amazing experience.

107

00:04:23,430 --> 00:04:25,260

And meeting the other ambassadors,

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00:04:25,260 --> 00:04:27,740

I'm so honored to be part of such a group.

109

00:04:27,740 --> 00:04:28,850

- And what's your story?

110

00:04:28,850 --> 00:04:31,940

How did you get inspired to go into space?

111

00:04:31,940 --> 00:04:33,340

- I was born with this disability.

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00:04:33,340 --> 00:04:37,850

And so when I was younger,  
I thought that the best job

113

00:04:37,850 --> 00:04:40,540

in the world would be to be in space

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00:04:40,540 --> 00:04:43,970

where I could float around  
and I wouldn't need the chair,

115

00:04:43,970 --> 00:04:45,840

and I didn't have to look up at people.

116

00:04:45,840 --> 00:04:49,103

And it just felt like  
a perfect job to have.

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00:04:49,103 --> 00:04:51,400

When I was younger, I  
wanted to be an astronaut,

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00:04:51,400 --> 00:04:54,610

and as I got older, I  
focused more on engineering

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00:04:54,610 --> 00:04:58,710

because I realized that I  
depend a lot on equipment

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00:04:58,710 --> 00:05:01,710

to be independent from  
my chair and my arms,

121

00:05:01,710 --> 00:05:04,440

and especially equipment to drive my van.

122

00:05:04,440 --> 00:05:06,480

So based on all those things

123

00:05:06,480 --> 00:05:08,913

it just felt natural  
to choose engineering.

124

00:05:09,810 --> 00:05:12,380

- You've had some really

interesting roles at NASA.

125

00:05:12,380 --> 00:05:14,570

Can you tell us about a few of them?

126

00:05:14,570 --> 00:05:16,950

- My very first job with NASA was at

127

00:05:16,950 --> 00:05:18,050

the Kennedy Space Center.

128

00:05:18,050 --> 00:05:19,740

I was a payload safety engineer

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00:05:19,740 --> 00:05:23,530

and that was an incredible way to be introduced to NASA.

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00:05:23,530 --> 00:05:25,720

I mean the excitement of working

131

00:05:25,720 --> 00:05:27,550

for America's space program.

132

00:05:27,550 --> 00:05:29,590

And we used to approve everything

133

00:05:29,590 --> 00:05:30,830

that went up on the shuttle

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00:05:30,830 --> 00:05:33,720

or the expendable launch vehicles, the rockets,

135

00:05:33,720 --> 00:05:36,110

and I loved everything about it.

136

00:05:36,110 --> 00:05:38,810

Just learning about the  
International Space Station

137

00:05:38,810 --> 00:05:41,310  
and working on the Mars Orbiter.

138

00:05:41,310 --> 00:05:43,200  
It was just excellent.

139

00:05:43,200 --> 00:05:46,300  
And then a few years later,  
I transferred to AIMS

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00:05:46,300 --> 00:05:47,410  
and then I worked three years

141

00:05:47,410 --> 00:05:49,720  
as a ISS payload logistics lead.

142

00:05:49,720 --> 00:05:52,610  
And now I was working with the project

143

00:05:52,610 --> 00:05:54,550  
that would put up biological experiments

144

00:05:54,550 --> 00:05:56,660  
on the International Space Station.

145

00:05:56,660 --> 00:05:59,360  
- So amazing, all that  
is such great science

146

00:05:59,360 --> 00:06:01,910  
and it's really moving  
exploration forward.

147

00:06:01,910 --> 00:06:04,840  
And what's your role now  
at NASA headquarters?

148

00:06:04,840 --> 00:06:08,020

- Now I am working for  
the Science Engagement

149

00:06:08,020 --> 00:06:09,020

and Partnerships Division

150

00:06:09,020 --> 00:06:11,170

under the Science Mission Directory.

151

00:06:11,170 --> 00:06:13,180

And I manage the day-to-day operations

152

00:06:13,180 --> 00:06:15,360

of the science.nasa.gov website.

153

00:06:15,360 --> 00:06:17,380

So how can we get our science

154

00:06:17,380 --> 00:06:19,350

out to the widest possible audience?

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00:06:19,350 --> 00:06:23,340

And right now we are focused  
more on this special project

156

00:06:23,340 --> 00:06:27,410

where we're modernizing and  
we are reducing our footprint

157

00:06:27,410 --> 00:06:31,680

and improving the user  
experience to our website.

158

00:06:31,680 --> 00:06:32,590

- That's so important,

159

00:06:32,590 --> 00:06:34,820

that whole piece of how  
we communicate what we do

160

00:06:34,820 --> 00:06:37,440

to the public to engage and inspire.

161

00:06:37,440 --> 00:06:40,510

And so what advice do you give

162

00:06:40,510 --> 00:06:43,000

to young women when you meet them?

163

00:06:43,000 --> 00:06:44,930

- The best advice I can give is

164

00:06:44,930 --> 00:06:47,290

to figure out what you love to do,

165

00:06:47,290 --> 00:06:50,030

'cause if you get a job doing that

166

00:06:50,030 --> 00:06:52,010

then you won't work a day in your life.

167

00:06:52,010 --> 00:06:57,010

And more importantly, don't  
let others expectations of you,

168

00:06:58,610 --> 00:07:00,470

of what they think you should be doing,

169

00:07:00,470 --> 00:07:02,760

don't let that sway you from your dreams

170

00:07:02,760 --> 00:07:05,523

because you have the  
power to make it happen.

171

00:07:06,580 --> 00:07:08,190

- That was such an amazing conversation.

172

00:07:08,190 --> 00:07:10,810

You know, she is so inspiring to me.

173

00:07:10,810 --> 00:07:12,530

I just can't believe what girls must think

174

00:07:12,530 --> 00:07:15,030

when they come in here

and see these statues

175

00:07:15,030 --> 00:07:17,070

and get inspired by these women.

176

00:07:17,070 --> 00:07:19,980

- I'm just so inspired,  
not only as a scientist,

177

00:07:19,980 --> 00:07:22,810

as a leader, but also as  
a father of a daughter

178

00:07:22,810 --> 00:07:25,430

who's also thinking  
about science as a future

179

00:07:25,430 --> 00:07:27,360

and as one that tries  
to inspire many others.

180

00:07:27,360 --> 00:07:29,710

I'm just so proud of them and excited

181

00:07:29,710 --> 00:07:32,313

for what this exhibit  
can do in so many lives.

182

00:07:32,313 --> 00:07:33,650

- Well at the Smithsonian,

183

00:07:33,650 --> 00:07:36,570

we're mostly used to  
celebrating women from history.

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00:07:36,570 --> 00:07:38,600

But what I love about this exhibit is

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00:07:38,600 --> 00:07:41,370

that we're celebrating women right now

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00:07:41,370 --> 00:07:43,070

who are making such a difference.

187

00:07:43,070 --> 00:07:45,330

And that's really exciting to me.

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00:07:45,330 --> 00:07:46,670

Thank you for joining us.

189

00:07:46,670 --> 00:07:48,834

And we look forward to the next episode