



AbSciCon  
2019

The logo is a circular emblem with a green border. Inside, a blue satellite with a long antenna orbits a stylized landscape. The landscape includes a row of green coniferous trees at the bottom, blue mountains in the middle, and a white tower with a circular top (resembling the Space Needle) in the background. The text 'AbSciCon' is written in a black, sans-serif font across the top half of the circle, and '2019' is written in a larger, bold, black, sans-serif font across the bottom half. Small white stars are scattered around the circle's perimeter.

1  
00:00:00,790 --> 00:00:07,320

[Music]

2  
00:00:07,330 --> 00:00:10,630

[Applause]

3  
00:00:16,880 --> 00:00:13,310

it's gonna be a fantastic week we have a

4  
00:00:21,019 --> 00:00:16,890

very packed schedule as always there is

5  
00:00:23,900 --> 00:00:21,029

no time to sleep and and as our former

6  
00:00:25,880 --> 00:00:23,910

pa-o office at NASA always says science

7  
00:00:28,490 --> 00:00:25,890

never sleeps and so we plan on putting

8  
00:00:29,840 --> 00:00:28,500

it to the test here in Bellevue so we

9  
00:00:32,240 --> 00:00:29,850

have lots of really great things going

10  
00:00:33,530 --> 00:00:32,250

on exciting speakers great sections but

11  
00:00:35,450 --> 00:00:33,540

I want to bring a couple things to your

12  
00:00:37,729 --> 00:00:35,460

attention one thing is the meetings

13  
00:00:42,290 --> 00:00:37,739

green and so very nicely there are no

14

00:00:43,969 --> 00:00:42,300

plastic holders just paper yay in

15

00:00:46,369 --> 00:00:43,979

addition to that we don't have programs

16

00:00:48,560 --> 00:00:46,379

but we do have the mobile app it's

17

00:00:50,509 --> 00:00:48,570

called AG you events and you can either

18

00:00:53,030 --> 00:00:50,519

download it through the link from the

19

00:00:57,590 --> 00:00:53,040

program or it's also in the Apple Store

20

00:00:59,630 --> 00:00:57,600

or Google Play apps available for

21

00:01:02,630 --> 00:00:59,640

download so make sure you download that

22

00:01:05,000 --> 00:01:02,640

sign yourself up for notifications make

23

00:01:06,289 --> 00:01:05,010

your schedule don't miss a thing

24

00:01:08,510 --> 00:01:06,299

if you have any problems with

25

00:01:11,030 --> 00:01:08,520

downloading or operating it there's a

26

00:01:14,749 --> 00:01:11,040

helpdesk right next to registration so

27

00:01:16,550 --> 00:01:14,759

check that out also something that's new

28

00:01:18,590 --> 00:01:16,560

this year and for those of you that have

29

00:01:21,830 --> 00:01:18,600

been at age you may remember that as

30

00:01:23,749 --> 00:01:21,840

part of the poster session there were

31

00:01:25,789 --> 00:01:23,759

also these things called alight night

32

00:01:28,249 --> 00:01:25,799

which i think is what this is it's a

33

00:01:31,010 --> 00:01:28,259

multimedia opportunity for you to

34

00:01:33,349 --> 00:01:31,020

interact with scientists and their

35

00:01:35,419 --> 00:01:33,359

research and so you can of course look

36

00:01:37,989 --> 00:01:35,429

for that schedule on your app it's there

37

00:01:40,249 --> 00:01:37,999

please mark some and drop by and see one

38

00:01:43,190 --> 00:01:40,259

before we move on to what's happening

39

00:01:45,739 --> 00:01:43,200

here tonight I wanted to take an

40

00:01:47,749 --> 00:01:45,749

opportunity to thank a few people first

41

00:01:49,279 --> 00:01:47,759

of all I'd like to thank Vicki meadows

42

00:01:51,919 --> 00:01:49,289

who is the chair of the science

43

00:01:54,760 --> 00:01:51,929

organizing committee and our host here

44

00:01:54,770 --> 00:01:58,070

[Applause]

45

00:02:03,270 --> 00:02:01,440

so Vicki and her committee have done an

46

00:02:05,640 --> 00:02:03,280

amazing job put together a great

47

00:02:08,460 --> 00:02:05,650

schedule and worked very hard to to

48

00:02:11,940 --> 00:02:08,470

showcase all the research that we do in

49

00:02:14,610 --> 00:02:11,950

astrobiology I'd also like to thank our

50

00:02:17,870 --> 00:02:14,620

sponsors we have the earth and Life

51  
00:02:20,940 --> 00:02:17,880  
Science Institute and the Tokyo Tech

52  
00:02:23,670 --> 00:02:20,950  
University we have the SETI Institute

53  
00:02:25,710 --> 00:02:23,680  
and Blue Marble space institute of

54  
00:02:31,440 --> 00:02:25,720  
science so round of applause for them as

55  
00:02:34,470 --> 00:02:31,450  
well and that's about it for me have a

56  
00:02:36,840 --> 00:02:34,480  
fantastic week take advantage of

57  
00:02:38,430 --> 00:02:36,850  
everything we have to offer and anyone

58  
00:02:41,640 --> 00:02:38,440  
who's interested in hosting this next

59  
00:02:51,640 --> 00:02:41,650  
year in your city come and talk to me so

60  
00:02:57,140 --> 00:02:54,259  
hi there I'm Melissa kerbin Brooks from

61  
00:03:00,860 --> 00:02:57,150  
the NASA Astrobiology and Susan SS

62  
00:03:03,259 --> 00:03:00,870  
trials do program so I just wanted to

63  
00:03:05,899 --> 00:03:03,269

you know share some thoughts today

64

00:03:07,729 --> 00:03:05,909

before I introduce Anthony so at the

65

00:03:09,559 --> 00:03:07,739

fitting of any conference that I've

66

00:03:11,089 --> 00:03:09,569

attended I'm always in anticipation of

67

00:03:12,710 --> 00:03:11,099

what I'm gonna learn and what

68

00:03:16,039 --> 00:03:12,720

breakthroughs are gonna be shared so I

69

00:03:18,050 --> 00:03:16,049

want to hear more about methane this

70

00:03:20,089 --> 00:03:18,060

year's F's icon theme is that they're

71

00:03:23,300 --> 00:03:20,099

standing and enabling the search for

72

00:03:24,530 --> 00:03:23,310

life on worlds near and far from the

73

00:03:27,379 --> 00:03:24,540

time I was a child I was always

74

00:03:29,180 --> 00:03:27,389

fascinated by imagining the future and

75

00:03:32,149 --> 00:03:29,190

what humans could be like in the future

76

00:03:35,240 --> 00:03:32,159

in future worlds so I grew up with the

77

00:03:37,849 --> 00:03:35,250

original Star Trek and I enjoyed Voyager

78

00:03:41,599 --> 00:03:37,859

and the next generation and Deep Space

79

00:03:41,599 --> 00:03:41,609

Nine and even Enterprise

80

00:03:50,479 --> 00:03:45,110

then came Star Trek discovery and we had

81

00:03:51,610 --> 00:03:50,489

an actual astrobiologist or in an astro

82

00:03:55,069 --> 00:03:51,620

mycologist

83

00:03:57,680 --> 00:03:55,079

they use a spore drive and they feature

84

00:04:00,770 --> 00:03:57,690

a giant tardigrade was my favorite

85

00:04:03,289 --> 00:04:00,780

creature so I love Mykel Burnham's

86

00:04:05,780 --> 00:04:03,299

character but I particularly was excited

87

00:04:08,930 --> 00:04:05,790

about Lieutenant Commander Paul Stamets

88

00:04:11,930 --> 00:04:08,940

the Astro mycologist who was actually

89

00:04:15,680 --> 00:04:11,940

based on a true mycologist Paul Stamets

90

00:04:20,529 --> 00:04:15,690

who wrote a book in 2005 called mycelium

91

00:04:23,240 --> 00:04:20,539

running how mushrooms can save the world

92

00:04:28,700 --> 00:04:23,250

so this astrobiologists Lieutenant

93

00:04:31,700 --> 00:04:28,710

Commander Paul Stamets has a hat on as a

94

00:04:34,010 --> 00:04:31,710

member of the crew his husband dr. Hugh

95

00:04:36,290 --> 00:04:34,020

kulbir who's the medical officer so

96

00:04:38,870 --> 00:04:36,300

they're the first same-sex couple in the

97

00:04:39,469 --> 00:04:38,880

future that I know about and it wasn't a

98

00:04:41,420 --> 00:04:39,479

big deal

99

00:04:44,839 --> 00:04:41,430

it was very matter-of-fact in the show

100

00:04:47,000 --> 00:04:44,849

so this is how I imagined the future so

101  
00:04:49,550 --> 00:04:47,010  
some background on our guest Anthony

102  
00:04:51,320 --> 00:04:49,560  
Rapp so you may know him from his

103  
00:04:53,960 --> 00:04:51,330  
various roles throughout his prolific

104  
00:04:56,120 --> 00:04:53,970  
acting career in singing career he's

105  
00:04:58,520 --> 00:04:56,130  
best known for original role of Mark

106  
00:04:59,530 --> 00:04:58,530  
Cohen in Jonathan Larson's Tony

107  
00:05:02,260 --> 00:04:59,540  
award-winning

108  
00:05:04,930 --> 00:05:02,270  
Rockhopper um rent for which he shared

109  
00:05:07,030 --> 00:05:04,940  
an Obie Award with the rest of the cast

110  
00:05:09,220 --> 00:05:07,040  
and his films include adventures in

111  
00:05:12,640 --> 00:05:09,230  
babysitting dazed and confused A

112  
00:05:15,190 --> 00:05:12,650  
Beautiful Mind and rent he is a writer

113  
00:05:17,680 --> 00:05:15,200

as well and Anthony penned a New York

114

00:05:20,920 --> 00:05:17,690

Times bestseller without you a memoir of

115

00:05:22,690 --> 00:05:20,930

love loss and the musical Rent he can

116

00:05:25,000 --> 00:05:22,700

currently be seen as Lieutenant

117

00:05:28,660 --> 00:05:25,010

Commander Paul Stamets on Star Trek

118

00:05:37,850 --> 00:05:28,670

Discovery on CBS all access so please

119

00:05:43,649 --> 00:05:41,459

thank you I know that you all had

120

00:05:44,879 --> 00:05:43,659

academic and scientific conferences are

121

00:05:46,709 --> 00:05:44,889

probably used to like standing behind

122

00:05:49,439 --> 00:05:46,719

podiums and having like laser pointers

123

00:05:50,939 --> 00:05:49,449

but I'm I'm used to like I come from

124

00:05:53,399 --> 00:05:50,949

theaters I'm used to be able to roam

125

00:05:55,049 --> 00:05:53,409

freely so I'm gonna I'm gonna stand here

126

00:05:56,159 --> 00:05:55,059

probably more often than not if that's

127

00:05:59,039 --> 00:05:56,169

okay with you

128

00:06:00,419 --> 00:05:59,049

thank you very much Melissa for having

129

00:06:03,389 --> 00:06:00,429

me be a part of this

130

00:06:05,219 --> 00:06:03,399

I am truly in awe of the work that all

131

00:06:08,969 --> 00:06:05,229

of you from around the world are doing

132

00:06:12,209 --> 00:06:08,979

in this wonderful field of astrobiology

133

00:06:14,489 --> 00:06:12,219

which I you know the the it really means

134

00:06:18,989 --> 00:06:14,499

to me it's like the study of Star life

135

00:06:20,219 --> 00:06:18,999

you know Astro star biology life you

136

00:06:26,399 --> 00:06:20,229

know so back it's close to Star Trek

137

00:06:27,600 --> 00:06:26,409

right I'm here because of because of

138

00:06:31,439 --> 00:06:27,610

start being a part of Star Trek

139

00:06:33,899 --> 00:06:31,449

discovery which is strange and if I look

140

00:06:38,279 --> 00:06:33,909

back on my life the the path that I've

141

00:06:40,139 --> 00:06:38,289

taken is one that's I wouldn't have

142

00:06:42,629 --> 00:06:40,149

predicted that I would be in that show

143

00:06:45,929 --> 00:06:42,639

in particular but um I grew up as a

144

00:06:47,809 --> 00:06:45,939

major nerd and I grew up out in a suburb

145

00:06:50,339 --> 00:06:47,819

of Chicago called Joliet Illinois

146

00:06:51,929 --> 00:06:50,349

reading comic books watching the

147

00:06:54,089 --> 00:06:51,939

original Star Trek movies in the movie

148

00:06:57,029 --> 00:06:54,099

theaters watching the original Star Wars

149

00:06:59,489 --> 00:06:57,039

movies in the movie theaters when I was

150

00:07:01,559 --> 00:06:59,499

like 6 7 8 years old so I've always been

151  
00:07:04,069 --> 00:07:01,569  
captivated by that but I always thought

152  
00:07:07,469 --> 00:07:04,079  
that I would be an audience member a

153  
00:07:10,859 --> 00:07:07,479  
bystander to peering into these worlds

154  
00:07:12,299 --> 00:07:10,869  
and being struck with Wonder by them but

155  
00:07:14,279 --> 00:07:12,309  
I never imagined myself being in them

156  
00:07:15,989 --> 00:07:14,289  
because I was really a creature of the

157  
00:07:19,439 --> 00:07:15,999  
theater I was in musical theater from

158  
00:07:22,769 --> 00:07:19,449  
the age of 6 so if a couple of years ago

159  
00:07:25,769 --> 00:07:22,779  
I literally and I was getting ready for

160  
00:07:27,209 --> 00:07:25,779  
bed and my check my email one more time

161  
00:07:30,479 --> 00:07:27,219  
before going to sleep and I had this

162  
00:07:32,579 --> 00:07:30,489  
email from my my representative my

163  
00:07:34,409 --> 00:07:32,589

manager saying are you interested in

164

00:07:36,959 --> 00:07:34,419

being a part of the new Star Trek series

165

00:07:38,729 --> 00:07:36,969

and I was like uh-huh yeah of course I

166

00:07:40,109 --> 00:07:38,739

had no idea what role it would be didn't

167

00:07:42,149 --> 00:07:40,119

even matter whatever it was I would I

168

00:07:44,339 --> 00:07:42,159

would have been the guy walking down the

169

00:07:47,129 --> 00:07:44,349

corridor with like an antenna sticking

170

00:07:49,149 --> 00:07:47,139

out of my head um so was it literally

171

00:07:50,529 --> 00:07:49,159

just dropped into

172

00:07:52,839 --> 00:07:50,539

wasn't and it wasn't an audition it was

173

00:07:54,549 --> 00:07:52,849

just an offer which doesn't happen very

174

00:07:55,389 --> 00:07:54,559

often in my field believe me there are

175

00:07:57,189 --> 00:07:55,399

plenty of things that I've had to

176  
00:07:59,019 --> 00:07:57,199  
audition for plenty of times and never

177  
00:08:00,879 --> 00:07:59,029  
got plenty of things that I've

178  
00:08:02,559 --> 00:08:00,889  
auditioned forward and did get and only

179  
00:08:04,540 --> 00:08:02,569  
a small handful of things that were just

180  
00:08:07,899 --> 00:08:04,550  
offered in this way so it was it was

181  
00:08:08,409 --> 00:08:07,909  
such a gift that that fell out of out of

182  
00:08:12,879 --> 00:08:08,419  
the sky

183  
00:08:14,829 --> 00:08:12,889  
into my lap and it has already opened up

184  
00:08:17,169 --> 00:08:14,839  
so many incredible doors and

185  
00:08:18,879 --> 00:08:17,179  
opportunities including being here one

186  
00:08:24,249 --> 00:08:18,889  
of the this the reason not that I am

187  
00:08:27,939 --> 00:08:24,259  
here more directly is that I was invited

188  
00:08:29,919 --> 00:08:27,949

to go to NASA the Ames Research Center

189

00:08:34,540 --> 00:08:29,929

in Mountain View California because

190

00:08:36,519 --> 00:08:34,550

thanks Thank You social media I was I

191

00:08:39,909 --> 00:08:36,529

received a message on Facebook of all

192

00:08:43,959 --> 00:08:39,919

places from a an employee there who was

193

00:08:48,189 --> 00:08:43,969

putting together a speaking event around

194

00:08:50,410 --> 00:08:48,199

the pride pride month or at slash LGBT

195

00:08:52,749 --> 00:08:50,420

employees association and he thought

196

00:08:54,939 --> 00:08:52,759

it'd be cool or if I would be interested

197

00:08:56,590 --> 00:08:54,949

in in being a part of that and I

198

00:08:59,230 --> 00:08:56,600

immediately jumped to that chance and

199

00:09:01,600 --> 00:08:59,240

while I was there I met Melissa I got to

200

00:09:03,009 --> 00:09:01,610

sit in and speak with her and her

201  
00:09:04,120 --> 00:09:03,019  
colleagues about the incredible work

202  
00:09:06,460 --> 00:09:04,130  
they're doing the austere biology

203  
00:09:07,809 --> 00:09:06,470  
astrobiology Institute and then we just

204  
00:09:08,999 --> 00:09:07,819  
kept in touch and said would you be

205  
00:09:12,730 --> 00:09:09,009  
interested in coming to this conference

206  
00:09:15,790 --> 00:09:12,740  
so yes so this whole thing has been a

207  
00:09:18,009 --> 00:09:15,800  
matter of incredible circumstance and

208  
00:09:20,439 --> 00:09:18,019  
luck and I would say a little bit of

209  
00:09:21,999 --> 00:09:20,449  
perseverance but it struck me that it's

210  
00:09:24,490 --> 00:09:22,009  
not exactly the same thing as what you

211  
00:09:30,009 --> 00:09:24,500  
all are doing with this mysterious and

212  
00:09:31,960 --> 00:09:30,019  
wonderful pursuit of discovering life in

213  
00:09:34,629 --> 00:09:31,970

the deepest weirdest parts of our planet

214

00:09:36,100 --> 00:09:34,639

as well as exoplanets and many other

215

00:09:38,559 --> 00:09:36,110

planets out there in the in the universe

216

00:09:40,360 --> 00:09:38,569

but it seems to me that it is a mixture

217

00:09:41,949 --> 00:09:40,370

of all those things you certainly don't

218

00:09:43,509 --> 00:09:41,959

always know where the opportunity will

219

00:09:46,420 --> 00:09:43,519

come where you'll make this discovery

220

00:09:47,829 --> 00:09:46,430

but you keep just putting your your nose

221

00:09:49,780 --> 00:09:47,839

to the grindstone sticking your heads

222

00:09:51,999 --> 00:09:49,790

and your computers working with each

223

00:09:53,769 --> 00:09:52,009

other across disciplines and hopefully

224

00:09:55,269 --> 00:09:53,779

you will you will find these these

225

00:09:58,240 --> 00:09:55,279

breakthroughs maybe this methane won't

226  
00:09:59,140 --> 00:09:58,250  
mean something and I know that I'm an

227  
00:10:00,580 --> 00:09:59,150  
actor

228  
00:10:02,740 --> 00:10:00,590  
I'm playing a scientist I have

229  
00:10:05,020 --> 00:10:02,750  
incredible regard for science I'm

230  
00:10:07,180 --> 00:10:05,030  
learning more about science from playing

231  
00:10:08,410 --> 00:10:07,190  
the scientist and I know that you all as

232  
00:10:10,720 --> 00:10:08,420  
far as I know maybe some of you are

233  
00:10:12,820 --> 00:10:10,730  
moonlighting actors but if you are

234  
00:10:14,860 --> 00:10:12,830  
scientists right so it seems like there

235  
00:10:16,720 --> 00:10:14,870  
might be something of a gulf between the

236  
00:10:19,870 --> 00:10:16,730  
work that I do and the work that you do

237  
00:10:22,390 --> 00:10:19,880  
but as I've been thinking about coming

238  
00:10:25,570 --> 00:10:22,400

here I think that there are some really

239

00:10:27,070 --> 00:10:25,580

strong parallels and I was especially

240

00:10:31,380 --> 00:10:27,080

struck by that earlier today when I was

241

00:10:33,250 --> 00:10:31,390

part of in sitting in on a media

242

00:10:36,130 --> 00:10:33,260

presentation to the media about some of

243

00:10:38,110 --> 00:10:36,140

the work that's been going on one of the

244

00:10:39,820 --> 00:10:38,120

things that is very similar to me is

245

00:10:42,190 --> 00:10:39,830

that if you sit down in front of your

246

00:10:44,170 --> 00:10:42,200

computer and you put up Netflix or CBS

247

00:10:45,550 --> 00:10:44,180

all access or Amazon Prime you sit in

248

00:10:48,040 --> 00:10:45,560

front of your TV you see the finished

249

00:10:49,660 --> 00:10:48,050

product and yes you could look at the

250

00:10:51,130 --> 00:10:49,670

credits at the end and you could see oh

251  
00:10:53,290 --> 00:10:51,140  
there's all those people who do those

252  
00:10:54,460 --> 00:10:53,300  
weird mysterious things from all those

253  
00:10:56,230 --> 00:10:54,470  
different departments but basically

254  
00:10:58,840 --> 00:10:56,240  
you're just looking at the shiny

255  
00:11:01,540 --> 00:10:58,850  
pictures and the people who are in front

256  
00:11:03,400 --> 00:11:01,550  
of the camera and and and the story

257  
00:11:05,350 --> 00:11:03,410  
that's been told and all the work that

258  
00:11:06,550 --> 00:11:05,360  
went into telling it happened over there

259  
00:11:08,950 --> 00:11:06,560  
and you don't necessarily know anything

260  
00:11:09,990 --> 00:11:08,960  
about that but you just present to the

261  
00:11:12,400 --> 00:11:10,000  
finished product

262  
00:11:13,690 --> 00:11:12,410  
similarly if I'm sitting and I'm like

263  
00:11:14,830 --> 00:11:13,700

doing a little google search about like

264

00:11:16,930 --> 00:11:14,840

what's happening with pursuit of

265

00:11:19,630 --> 00:11:16,940

discovery of life on Mars what I see is

266

00:11:22,930 --> 00:11:19,640

the pictures from the Rovers and you

267

00:11:24,340 --> 00:11:22,940

know I maybe will find a the headline

268

00:11:27,400 --> 00:11:24,350

today that I saw in the New York Times

269

00:11:29,830 --> 00:11:27,410

about the methane on Mars but of clearly

270

00:11:31,650 --> 00:11:29,840

from today's presentation there are so

271

00:11:34,440 --> 00:11:31,660

many different departments that are so

272

00:11:38,200 --> 00:11:34,450

invisible to us in the public sphere

273

00:11:41,070 --> 00:11:38,210

that requires so much in so many months

274

00:11:43,660 --> 00:11:41,080

years of preparation so much

275

00:11:46,090 --> 00:11:43,670

interdisciplinary collaboration between

276

00:11:47,490 --> 00:11:46,100

all the different departments and I dare

277

00:11:49,930 --> 00:11:47,500

say that it's very much the same thing

278

00:11:52,210 --> 00:11:49,940

when you sit down and watch Star Trek

279

00:11:53,980 --> 00:11:52,220

discovery there are these guys called

280

00:11:55,750 --> 00:11:53,990

grips that move the equipment around and

281

00:11:57,330 --> 00:11:55,760

that they have to know the inside the

282

00:12:01,110 --> 00:11:57,340

inner workings of the of the

283

00:12:02,250 --> 00:12:01,120

lights and cameras that I don't I

284

00:12:03,690 --> 00:12:02,260

certainly wouldn't know how to do that I

285

00:12:05,580 --> 00:12:03,700

mean I could I guess I could push

286

00:12:07,320 --> 00:12:05,590

something but you know they there's a

287

00:12:10,140 --> 00:12:07,330

certain level higher level of skill than

288

00:12:11,880 --> 00:12:10,150

that there are the the months of the

289

00:12:13,940 --> 00:12:11,890

writers getting together in the room to

290

00:12:16,470 --> 00:12:13,950

what they call break a story where they

291

00:12:18,810 --> 00:12:16,480

discuss the ideas of the plot that they

292

00:12:21,450 --> 00:12:18,820

want to tell that they think about the

293

00:12:23,790 --> 00:12:21,460

creatures they might want to create for

294

00:12:25,470 --> 00:12:23,800

the this iteration of Star Trek and

295

00:12:27,870 --> 00:12:25,480

believe me astrobiologists we are aware

296

00:12:29,310 --> 00:12:27,880

that in the universe it's unlikely we're

297

00:12:32,280 --> 00:12:29,320

going to find quite so many humanoid

298

00:12:33,570 --> 00:12:32,290

light creatures we understand this but

299

00:12:35,880 --> 00:12:33,580

you have to understand that it's really

300

00:12:37,320 --> 00:12:35,890

a matter of our biology as humans

301  
00:12:39,240 --> 00:12:37,330  
playing these roles I mean I'm not

302  
00:12:42,120 --> 00:12:39,250  
playing I'm playing a human but you know

303  
00:12:43,890 --> 00:12:42,130  
there's only so much you can do with two

304  
00:12:46,829 --> 00:12:43,900  
people who have two eyes and nose a

305  
00:12:48,510 --> 00:12:46,839  
mouth and ears and so most of the you

306  
00:12:50,370 --> 00:12:48,520  
know so the creatures and aliens that

307  
00:12:52,800 --> 00:12:50,380  
get created have to have something like

308  
00:12:55,019 --> 00:12:52,810  
that or else you'd have actors walking

309  
00:12:56,700 --> 00:12:55,029  
into walls you know there was at one

310  
00:12:58,290 --> 00:12:56,710  
point a tardigrade a giant tardigrade

311  
00:13:02,820 --> 00:12:58,300  
that was meant to be a member of our

312  
00:13:04,590 --> 00:13:02,830  
crew but truly but it turned out you

313  
00:13:06,329 --> 00:13:04,600

know that just the budgetary concerns

314

00:13:07,530 --> 00:13:06,339

and the you know all that stuff and

315

00:13:08,940 --> 00:13:07,540

makes it a little impossible maybe

316

00:13:11,579 --> 00:13:08,950

that'll happen in the future as these

317

00:13:13,380 --> 00:13:11,589

those costs go down or whatever so we

318

00:13:15,780 --> 00:13:13,390

understand that that it's very likely

319

00:13:17,880 --> 00:13:15,790

that that the the life that we would

320

00:13:19,380 --> 00:13:17,890

encounter if we were install fleet

321

00:13:22,350 --> 00:13:19,390

generally would probably be weird

322

00:13:26,400 --> 00:13:22,360

microbes or squid like things or gaseous

323

00:13:28,170 --> 00:13:26,410

forms or who knows what so we get it we

324

00:13:30,030 --> 00:13:28,180

get it but you know for now you're gonna

325

00:13:32,220 --> 00:13:30,040

have to deal with the Pigface men and

326

00:13:35,400 --> 00:13:32,230

the you know the the N Dorian's with the

327

00:13:37,890 --> 00:13:35,410

with the antennas and etc etc but I

328

00:13:39,480 --> 00:13:37,900

digress but anyway so we have these

329

00:13:41,190 --> 00:13:39,490

months of the of the writers breaking

330

00:13:42,780 --> 00:13:41,200

the story I don't even know all the

331

00:13:44,340 --> 00:13:42,790

stuff that they're doing I just get I

332

00:13:46,170 --> 00:13:44,350

get sent a script I read the script I

333

00:13:48,090 --> 00:13:46,180

get to learn you know download that

334

00:13:49,500 --> 00:13:48,100

information in my mind and then I show

335

00:13:51,480 --> 00:13:49,510

up on the set I'm surrounded by a

336

00:13:54,210 --> 00:13:51,490

hundred or more people who are members

337

00:13:56,460 --> 00:13:54,220

of the crew who do all the work we we

338

00:13:58,800 --> 00:13:56,470

break down the script into tiny parts

339

00:14:01,170 --> 00:13:58,810

you you work on one scene the day two

340

00:14:02,790 --> 00:14:01,180

maybe two or three scenes a day and then

341

00:14:05,190 --> 00:14:02,800

you never do it again you move on to the

342

00:14:06,540 --> 00:14:05,200

next scene and etc etc but then all of

343

00:14:09,840 --> 00:14:06,550

that gets shuffled into the digital

344

00:14:13,260 --> 00:14:09,850

information put into the editor

345

00:14:14,970 --> 00:14:13,270

hands then he or she edits it together

346

00:14:16,860 --> 00:14:14,980

into a form and then it's sent to the

347

00:14:19,380 --> 00:14:16,870

visual effects department and they put

348

00:14:21,750 --> 00:14:19,390

in all their wizardry and then you see

349

00:14:23,670 --> 00:14:21,760

the final product so I do believe that

350

00:14:26,610 --> 00:14:23,680

there's a great similarity and it's also

351

00:14:28,260 --> 00:14:26,620

true that I don't necessarily ever meet

352

00:14:29,579 --> 00:14:28,270

many of those people especially in the

353

00:14:31,769 --> 00:14:29,589

post-production what is called the

354

00:14:33,360 --> 00:14:31,779

post-production side of things and yet I

355

00:14:36,389 --> 00:14:33,370

could not do my job

356

00:14:38,040 --> 00:14:36,399

or my job wouldn't mean as much or it

357

00:14:39,480 --> 00:14:38,050

wouldn't be given the opportunity to

358

00:14:41,820 --> 00:14:39,490

mean as much if it weren't for all those

359

00:14:43,650 --> 00:14:41,830

people who I probably may never meet who

360

00:14:46,230 --> 00:14:43,660

were doing the incredible hours of work

361

00:14:47,820 --> 00:14:46,240

and with artistry and skill I would

362

00:14:49,829 --> 00:14:47,830

imagine it's similar in your field that

363

00:14:52,980 --> 00:14:49,839

there's people who were looking at those

364

00:14:54,210 --> 00:14:52,990

striations of weird rocks who are doing

365

00:14:55,410 --> 00:14:54,220

that kind of work who might not ever

366

00:14:59,130 --> 00:14:55,420

know the people who were building the

367

00:15:02,670 --> 00:14:59,140

drill on the rover that drills into the

368

00:15:05,940 --> 00:15:02,680

surface of Mars and yet you know the the

369

00:15:08,190 --> 00:15:05,950

one work absolutely informs or helps the

370

00:15:10,170 --> 00:15:08,200

other so I think that that's that is

371

00:15:11,970 --> 00:15:10,180

similar and it's also inspiring to me

372

00:15:14,670 --> 00:15:11,980

it's it's another level of awe that I

373

00:15:16,380 --> 00:15:14,680

have for the the layers of discipline

374

00:15:19,860 --> 00:15:16,390

the layers of artistry the layers of

375

00:15:22,230 --> 00:15:19,870

thought care creativity that is required

376

00:15:24,470 --> 00:15:22,240

in your field that I do you know I can

377

00:15:27,720 --> 00:15:24,480

start to lean into and grasp my head

378

00:15:29,490 --> 00:15:27,730

around because when I start hearing like

379

00:15:30,420 --> 00:15:29,500

certain terms I frankly you know I don't

380

00:15:32,519 --> 00:15:30,430

know I don't know what all these things

381

00:15:34,949 --> 00:15:32,529

mean I don't have the training you do

382

00:15:37,680 --> 00:15:34,959

but I do love to look at the pretty

383

00:15:38,880 --> 00:15:37,690

pictures of the Mars rover doing the

384

00:15:40,470 --> 00:15:38,890

things that it's doing the things that

385

00:15:43,530 --> 00:15:40,480

it's doing and I love getting to talk to

386

00:15:45,210 --> 00:15:43,540

Melissa and hearing even glimpses of the

387

00:15:49,740 --> 00:15:45,220

incredible research and work that you

388

00:15:51,980 --> 00:15:49,750

are all engaged in I I don't know if the

389

00:15:54,630 --> 00:15:51,990

people in this room would share this

390

00:15:56,010 --> 00:15:54,640

feeling but it's been shared with me

391

00:15:57,750 --> 00:15:56,020

many times over in the last couple of

392

00:16:00,840 --> 00:15:57,760

years since I was lucky enough to become

393

00:16:03,810 --> 00:16:00,850

a part of the Star Trek world that Star

394

00:16:05,579 --> 00:16:03,820

Trek has been such an important part of

395

00:16:07,670 --> 00:16:05,589

the scientific community an important

396

00:16:10,829 --> 00:16:07,680

source of inspiration and important

397

00:16:12,800 --> 00:16:10,839

mirror holding up a possible future a

398

00:16:16,920 --> 00:16:12,810

vision of a possible future and

399

00:16:20,280 --> 00:16:16,930

inspiring in some ways direct iterations

400

00:16:22,400 --> 00:16:20,290

into our technology so I'm I be curious

401  
00:16:24,259 --> 00:16:22,410  
to see how many people in this room

402  
00:16:27,079 --> 00:16:24,269  
that might be the case that some version

403  
00:16:31,220 --> 00:16:27,089  
of one of the myriad Star Trek stories

404  
00:16:33,050 --> 00:16:31,230  
had any part in helping encourage you to

405  
00:16:36,740 --> 00:16:33,060  
become the scientists that you are today

406  
00:16:38,840 --> 00:16:36,750  
I can tell you that meeting you and

407  
00:16:40,460 --> 00:16:38,850  
getting to engage with you has deeply

408  
00:16:44,030 --> 00:16:40,470  
inspired me in the work that I'm doing

409  
00:16:45,980 --> 00:16:44,040  
and when I you know very got to nerd out

410  
00:16:48,710 --> 00:16:45,990  
walking around the Ames Research Center

411  
00:16:52,699 --> 00:16:48,720  
in Mountain View I got to go back to the

412  
00:16:54,019 --> 00:16:52,709  
to the to my cast members and just they

413  
00:16:56,600 --> 00:16:54,029

were all jealous that I was the one who

414

00:16:59,210 --> 00:16:56,610

got to do that it's really exciting for

415

00:17:02,689 --> 00:16:59,220

us to know that the work that we're

416

00:17:04,069 --> 00:17:02,699

doing is perhaps in some ways helping to

417

00:17:05,689 --> 00:17:04,079

contribute to the work you're doing and

418

00:17:06,559 --> 00:17:05,699

I want you very much to know that the

419

00:17:07,850 --> 00:17:06,569

work you're doing is absolutely

420

00:17:13,279 --> 00:17:07,860

contributing to the work that we're

421

00:17:15,919 --> 00:17:13,289

doing you know the the condition of our

422

00:17:18,439 --> 00:17:15,929

planet is of course in peril in many

423

00:17:20,870 --> 00:17:18,449

ways from a biological standpoint as

424

00:17:24,649 --> 00:17:20,880

well as from a political humanistic

425

00:17:28,419 --> 00:17:24,659

standpoint and Star Trek was created by

426

00:17:31,460 --> 00:17:28,429

Gene Roddenberry as back in the 60s as

427

00:17:33,950 --> 00:17:31,470

holding up a notion of what the future

428

00:17:36,350 --> 00:17:33,960

could possibly be and that is the source

429

00:17:38,539 --> 00:17:36,360

of our inspiration of all of us who are

430

00:17:41,210 --> 00:17:38,549

involved in this telling up that story

431

00:17:44,510 --> 00:17:41,220

we believe that it's holding up a

432

00:17:47,060 --> 00:17:44,520

Paragon of a possibility of what the

433

00:17:49,549 --> 00:17:47,070

future could be where the surface

434

00:17:52,370 --> 00:17:49,559

differences between us as human beings

435

00:17:54,500 --> 00:17:52,380

and other alien species make no

436

00:17:56,390 --> 00:17:54,510

difference in terms of our ability to

437

00:17:58,970 --> 00:17:56,400

connect with one another our ability to

438

00:18:02,630 --> 00:17:58,980

learn from one another to teach one

439

00:18:05,570 --> 00:18:02,640

another and no barrier whatsoever to our

440

00:18:07,159 --> 00:18:05,580

ability to achieve anything and of

441

00:18:09,440 --> 00:18:07,169

course we know that we're still bumping

442

00:18:11,960 --> 00:18:09,450

up against all sorts of notions and

443

00:18:13,490 --> 00:18:11,970

prejudices in our current reality but I

444

00:18:17,029 --> 00:18:13,500

do believe that the work you're engaged

445

00:18:19,570 --> 00:18:17,039

in of reaching out into the unknown

446

00:18:22,610 --> 00:18:19,580

reaching out into the to the

447

00:18:25,460 --> 00:18:22,620

wilds and mysteries of the universe are

448

00:18:28,820 --> 00:18:25,470

absolutely helping could could and will

449

00:18:31,310 --> 00:18:28,830

and do help us to imagine the the

450

00:18:33,020 --> 00:18:31,320

greater reality that we're all engaged

451

00:18:35,480 --> 00:18:33,030

in which is that we are this tiny piece

452

00:18:37,010 --> 00:18:35,490

of this much larger hole and that is an

453

00:18:41,300 --> 00:18:37,020

enormous source of inspiration and

454

00:18:43,970 --> 00:18:41,310

meaning to all of us I this was this

455

00:18:46,760 --> 00:18:43,980

talk was billed as a discussion with and

456

00:18:49,190 --> 00:18:46,770

I'm very interested in having a

457

00:18:51,320 --> 00:18:49,200

discussion and opening up to two

458

00:18:55,700 --> 00:18:51,330

questions I don't know if scientists

459

00:18:57,200 --> 00:18:55,710

tend to be shy you know maybe if I would

460

00:18:59,450 --> 00:18:57,210

you know if you want to have arguments

461

00:19:00,800 --> 00:18:59,460

about you know certain details of the

462

00:19:05,090 --> 00:19:00,810

work you're doing I can't really engage

463

00:19:07,280 --> 00:19:05,100

with that as much on a micro level but

464

00:19:09,110 --> 00:19:07,290

I'm really interested to engage with you

465

00:19:12,230 --> 00:19:09,120

on any level answer any kind of question

466

00:19:13,580 --> 00:19:12,240

or have a have a discussion I'm gonna

467

00:19:15,680 --> 00:19:13,590

have questions of my own of like the

468

00:19:17,590 --> 00:19:15,690

kind of work that you do but I would you

469

00:19:20,480 --> 00:19:17,600

know the the time that I'm here and

470

00:19:21,590 --> 00:19:20,490

available to you I was really hopeful

471

00:19:24,580 --> 00:19:21,600

that it could be as much as anything

472

00:19:27,620 --> 00:19:24,590

also a conversation there are

473

00:19:29,150 --> 00:19:27,630

microphones in the aisles I know that

474

00:19:31,580 --> 00:19:29,160

there's one there one there one there

475

00:19:33,710 --> 00:19:31,590

and maybe and one there but again it

476  
00:19:35,960 --> 00:19:33,720  
does require people to be willing to not

477  
00:19:38,390 --> 00:19:35,970  
be shy or at least be shy and do it

478  
00:19:40,880 --> 00:19:38,400  
anyway which is one of the things you

479  
00:19:43,910 --> 00:19:40,890  
know that is written I see someone up

480  
00:19:46,220 --> 00:19:43,920  
there hello thank you yes hi my name is

481  
00:19:49,070 --> 00:19:46,230  
Riley I know many of my friends of

482  
00:19:50,960 --> 00:19:49,080  
looking at me right now so I mean what

483  
00:19:53,270 --> 00:19:50,970  
I'm sorry did you say my name is Ravi

484  
00:19:54,830 --> 00:19:53,280  
and I think many of my friends are

485  
00:19:58,100 --> 00:19:54,840  
looking at me right now because they

486  
00:20:04,640 --> 00:19:58,110  
know that I'm a super star trek fan okay

487  
00:20:06,590 --> 00:20:04,650  
I would love to know I'm a scientist at

488  
00:20:11,480 --> 00:20:06,600

NASA Goddard and I'm actually originally

489

00:20:14,240 --> 00:20:11,490

from India cool so I want to just thank

490

00:20:16,940 --> 00:20:14,250

you for coming here and it really means

491

00:20:20,210 --> 00:20:16,950

a lot because I've been interested in

492

00:20:22,100 --> 00:20:20,220

Star Trek since I was six years old

493

00:20:26,659 --> 00:20:22,110

grew up with you know the original Star

494

00:20:28,960 --> 00:20:26,669

Trek I never connected between you know

495

00:20:32,269 --> 00:20:28,970

why I was interested in astronomy and

496

00:20:34,340 --> 00:20:32,279

and and Star Trek but recently in the

497

00:20:35,899 --> 00:20:34,350

last six or seven years when I went to a

498

00:20:38,899 --> 00:20:35,909

Star Trek convention

499

00:20:40,669 --> 00:20:38,909

that's when I realize you know maybe

500

00:20:44,470 --> 00:20:40,679

that had a great influence on my career

501  
00:20:47,570 --> 00:20:44,480  
hmm I met William Shatner Leonard Nimoy

502  
00:20:50,749 --> 00:20:47,580  
so what I wanted to tell you is that

503  
00:20:53,749 --> 00:20:50,759  
when you go back and you know do your

504  
00:20:55,519 --> 00:20:53,759  
work on Star Trek discovery please tell

505  
00:20:59,690 --> 00:20:55,529  
the writers and the production people

506  
00:21:02,960 --> 00:20:59,700  
and everyone that it means a lot to me

507  
00:21:05,509 --> 00:21:02,970  
that there's a great show and I get

508  
00:21:07,159 --> 00:21:05,519  
inspiration from the show thank you

509  
00:21:14,690 --> 00:21:07,169  
thank you so much appreciate it thank

510  
00:21:16,940 --> 00:21:14,700  
you thank you hello hi Anthony again

511  
00:21:18,740 --> 00:21:16,950  
thank you for coming out I'm Wes I'm

512  
00:21:20,389 --> 00:21:18,750  
from Northern Illinois University not

513  
00:21:21,950 --> 00:21:20,399

too far from where you grew up yeah

514

00:21:23,720 --> 00:21:21,960

where Rose I know you located

515

00:21:26,899 --> 00:21:23,730

DeKalb the cowboy in the middle of

516

00:21:29,590 --> 00:21:26,909

nowhere a central anoints weird it's

517

00:21:32,930 --> 00:21:29,600

called more than but it's central anyway

518

00:21:35,419 --> 00:21:32,940

so part of I think why a lot of us like

519

00:21:37,610 --> 00:21:35,429

Star Trek is because it presents normal

520

00:21:40,159 --> 00:21:37,620

scientists and I dare say that your your

521

00:21:41,180 --> 00:21:40,169

character is pretty normal right and in

522

00:21:43,759 --> 00:21:41,190

Hollywood I think a lot of

523

00:21:48,139 --> 00:21:43,769

representation of scientists is crazy

524

00:21:51,320 --> 00:21:48,149

old white dudes right and so I love this

525

00:21:52,879 --> 00:21:51,330

little cranky frankly but you know but I

526

00:21:54,619 --> 00:21:52,889

think most of the people you talk here

527

00:21:55,549 --> 00:21:54,629

talk to here would probably say that

528

00:21:57,590 --> 00:21:55,559

this is one of their favorite

529

00:21:58,909 --> 00:21:57,600

conferences to go to and part of the

530

00:22:02,029 --> 00:21:58,919

reason is it's a very diverse audience

531

00:22:03,680 --> 00:22:02,039

it's very welcoming audience and a bunch

532

00:22:05,149 --> 00:22:03,690

of just normal people for the most part

533

00:22:09,889 --> 00:22:05,159

some of you ER some of you are pretty

534

00:22:11,389 --> 00:22:09,899

weird but do you think there's any you

535

00:22:13,639 --> 00:22:11,399

know change in Hollywood or any

536

00:22:15,619 --> 00:22:13,649

resistance to presenting those types of

537

00:22:17,779 --> 00:22:15,629

scientist rather than the you know the

538

00:22:19,700 --> 00:22:17,789

Big Bang Theory sort of eccentric

539

00:22:20,659 --> 00:22:19,710

scientists yeah I mean I think that

540

00:22:22,669 --> 00:22:20,669

there was there's been a concerted

541

00:22:24,830 --> 00:22:22,679

effort with Star Trek in general but

542

00:22:26,980 --> 00:22:24,840

especially with our iteration of it that

543

00:22:29,530 --> 00:22:26,990

Michael Barnum is

544

00:22:31,299 --> 00:22:29,540

what is it that I want to say that say

545

00:22:32,980 --> 00:22:31,309

it correctly she's a biologist herself

546

00:22:37,390 --> 00:22:32,990

alright and for xeno anthropologists

547

00:22:40,840 --> 00:22:37,400

rather you know she's a black woman who

548

00:22:43,060 --> 00:22:40,850

was raised on Vulcan so there's a you

549

00:22:45,340 --> 00:22:43,070

know it's an exploration of culture

550

00:22:47,890 --> 00:22:45,350

clash there and cultural truths and

551

00:22:51,280 --> 00:22:47,900

cultural differences then there's Tilly

552

00:22:53,500 --> 00:22:51,290

who's a scientist who you know there's

553

00:22:56,160 --> 00:22:53,510

people who are theorizing is she maybe

554

00:22:57,310 --> 00:22:56,170

on the spectrum that's never been stated

555

00:23:00,160 --> 00:22:57,320

equivocally

556

00:23:01,180 --> 00:23:00,170

by the by the writing staff but and it

557

00:23:03,669 --> 00:23:01,190

may or may not be true but she certainly

558

00:23:05,320 --> 00:23:03,679

deals with anxiety and then there

559

00:23:08,560 --> 00:23:05,330

Stamets who's you know like the cranky

560

00:23:10,330 --> 00:23:08,570

grill one um so yeah I think that there

561

00:23:14,220 --> 00:23:10,340

was a concerted effort to have this

562

00:23:17,530 --> 00:23:14,230

diversity of representation of really

563

00:23:18,820 --> 00:23:17,540

profoundly intelligent people who are

564

00:23:23,280 --> 00:23:18,830

able to come together and that those

565

00:23:26,380 --> 00:23:23,290

differences of skin color of gender of

566

00:23:28,419 --> 00:23:26,390

sexual preference sexual identity have

567

00:23:28,930 --> 00:23:28,429

no bearing on the work that they do

568

00:23:31,000 --> 00:23:28,940

together

569

00:23:33,490 --> 00:23:31,010

it never comes up it's never an issue

570

00:23:35,799 --> 00:23:33,500

never a question never anything what's

571

00:23:38,380 --> 00:23:35,809

always that question is are they getting

572

00:23:40,660 --> 00:23:38,390

to the right solution are they talking

573

00:23:44,350 --> 00:23:40,670

about the issues in a meaningful way and

574

00:23:45,820 --> 00:23:44,360

I think that that's absolutely mindfully

575

00:23:48,600 --> 00:23:45,830

done by the writers and it's something

576  
00:23:50,680 --> 00:23:48,610  
that we as a cast really deeply embrace

577  
00:23:53,020 --> 00:23:50,690  
and yes of course I think it's

578  
00:23:55,630 --> 00:23:53,030  
absolutely true that for far too long

579  
00:23:59,350 --> 00:23:55,640  
these kinds of stories have been

580  
00:24:01,480 --> 00:23:59,360  
dominated in the telling of them by the

581  
00:24:03,370 --> 00:24:01,490  
traditionally you know middle-aged white

582  
00:24:06,549 --> 00:24:03,380  
guy who's often kind of a little bit off

583  
00:24:07,660 --> 00:24:06,559  
his rocker you know and I'm sure that

584  
00:24:10,270 --> 00:24:07,670  
they're you know certainly they're I

585  
00:24:12,549 --> 00:24:10,280  
mean in some ways you know it's probably

586  
00:24:13,630 --> 00:24:12,559  
because Einstein I don't he was off his

587  
00:24:15,340 --> 00:24:13,640  
rocker but he's certainly you know had

588  
00:24:17,080 --> 00:24:15,350

the wild hair and he had you know he was

589

00:24:20,770 --> 00:24:17,090

you know he had the German accent so

590

00:24:24,310 --> 00:24:20,780

that that that became a kind of icon of

591

00:24:26,590 --> 00:24:24,320

what a scientist looked like and so that

592

00:24:28,150 --> 00:24:26,600

became understand and you could say it's

593

00:24:30,730 --> 00:24:28,160

understandable that that became the way

594

00:24:33,850 --> 00:24:30,740

that it was most often represented but I

595

00:24:36,130 --> 00:24:33,860

think it's so clear looking at this room

596

00:24:37,870 --> 00:24:36,140

of course and and I'm sure other rooms

597

00:24:38,560 --> 00:24:37,880

that are filled with scientists that is

598

00:24:50,950 --> 00:24:38,570

the

599

00:24:52,630 --> 00:24:50,960

field of show business who are telling

600

00:24:53,770 --> 00:24:52,640

these stories and putting these images

601  
00:24:56,860 --> 00:24:53,780  
and putting these characters on screen

602  
00:24:58,120 --> 00:24:56,870  
that they represent the world and all of

603  
00:25:01,780 --> 00:24:58,130  
the people in the world and for far too

604  
00:25:04,390 --> 00:25:01,790  
long it's been dominated only by white

605  
00:25:06,550 --> 00:25:04,400  
men just like so many other fields you

606  
00:25:08,830 --> 00:25:06,560  
know the stories the stories you know

607  
00:25:10,480 --> 00:25:08,840  
the the spoils belong to the victors and

608  
00:25:12,700 --> 00:25:10,490  
all that kind of thing you know so I'm

609  
00:25:14,080 --> 00:25:12,710  
very proud and honored that I am a part

610  
00:25:15,700 --> 00:25:14,090  
of something that's advancing that

611  
00:25:17,590 --> 00:25:15,710  
conversation in such a meaningful way

612  
00:25:25,420 --> 00:25:17,600  
and thank you for recognizing a lot

613  
00:25:28,000 --> 00:25:25,430

thank you hello hey so I'm Martha from

614

00:25:34,600 --> 00:25:28,010

Portugal working in Germany and I

615

00:25:35,080 --> 00:25:34,610

actually am an Astra mycologist Paul

616

00:25:38,410 --> 00:25:35,090

Stamets

617

00:25:42,490 --> 00:25:38,420

no actually so I am studying fungi in

618

00:25:44,590 --> 00:25:42,500

space more specifically fungal spores so

619

00:25:46,270 --> 00:25:44,600

I'm very happy that you actually brought

620

00:25:47,710 --> 00:25:46,280

us from my college into the world

621

00:25:50,820 --> 00:25:47,720

because it's super easy for me to

622

00:25:54,310 --> 00:25:50,830

explain and to sell my work right now

623

00:25:56,290 --> 00:25:54,320

you're welcome thank you so much I have

624

00:26:02,230 --> 00:25:56,300

one question for you how is it to travel

625

00:26:04,060 --> 00:26:02,240

on the mycelium Network however many oak

626

00:26:05,680 --> 00:26:04,070

jumps that was was it a hundred and I

627

00:26:09,570 --> 00:26:05,690

can remember the exact number 100 how

628

00:26:13,710 --> 00:26:11,850

that was agonizing that was a really

629

00:26:15,450 --> 00:26:13,720

hard day I had a headache at the end of

630

00:26:17,940 --> 00:26:15,460

that day that means seriously because I

631

00:26:20,009 --> 00:26:17,950

was like screaming for hours you know

632

00:26:22,019 --> 00:26:20,019

well you may or may not know this but

633

00:26:23,789 --> 00:26:22,029

when you see any in a finished product

634

00:26:25,350 --> 00:26:23,799

of a film or television show and you see

635

00:26:27,359 --> 00:26:25,360

you know thirty seconds of screen time

636

00:26:29,249 --> 00:26:27,369

might have taken many hours to film

637

00:26:30,720 --> 00:26:29,259

different angles different setups and

638

00:26:33,269 --> 00:26:30,730

everything like that so in that

639

00:26:35,430 --> 00:26:33,279

particular day when I was in that chair

640

00:26:37,139 --> 00:26:35,440

screaming and sweating and spraying

641

00:26:38,999 --> 00:26:37,149

water on me and glycerin and all that

642

00:26:41,249 --> 00:26:39,009

stuff that was that was really hard so

643

00:26:42,239 --> 00:26:41,259

that wasn't always so closer you know

644

00:26:44,999 --> 00:26:42,249

I'm sorry

645

00:26:49,769 --> 00:26:45,009

it was hard though then it's not fun

646

00:26:52,739 --> 00:26:49,779

yeah like I what I loved about some of

647

00:26:55,889 --> 00:26:52,749

the writing especially when I when that

648

00:26:58,169 --> 00:26:55,899

idea was first being introduced of my

649

00:27:01,560 --> 00:26:58,179

character being the one to navigate is

650

00:27:04,590 --> 00:27:01,570

that it's it was an experience of really

651  
00:27:07,320 --> 00:27:04,600  
seeing and being inside of the inner

652  
00:27:10,289 --> 00:27:07,330  
workings of something that was just the

653  
00:27:11,909 --> 00:27:10,299  
arete achill and I don't know about all

654  
00:27:13,529 --> 00:27:11,919  
of you in this room but I imagine that

655  
00:27:15,029 --> 00:27:13,539  
you you you know when you've had a

656  
00:27:16,950 --> 00:27:15,039  
breakthrough of some kind when you've

657  
00:27:18,330 --> 00:27:16,960  
touched when you've gotten really close

658  
00:27:19,409 --> 00:27:18,340  
you've been working at an idea or

659  
00:27:21,749 --> 00:27:19,419  
working at an ocean and then you

660  
00:27:24,149 --> 00:27:21,759  
actually really see it come to life that

661  
00:27:26,789 --> 00:27:24,159  
must be so incredibly powerful for you

662  
00:27:29,450 --> 00:27:26,799  
and so I feel like that it's it's a you

663  
00:27:32,249 --> 00:27:29,460

know it's a it's a metaphorical or

664

00:27:33,810 --> 00:27:32,259

imagined way of making that real but I

665

00:27:35,849 --> 00:27:33,820

think it was a beautiful way of making

666

00:27:37,379 --> 00:27:35,859

it real you know and the idea I'm sure

667

00:27:38,669 --> 00:27:37,389

you know as a mycologist I was just

668

00:27:41,129 --> 00:27:38,679

reading an article I don't know a couple

669

00:27:42,930 --> 00:27:41,139

weeks ago about how there's all this

670

00:27:44,190 --> 00:27:42,940

studying being done about how trees

671

00:27:46,320 --> 00:27:44,200

communicate with each other through the

672

00:27:48,810 --> 00:27:46,330

my seal the net work that goes on under

673

00:27:50,759 --> 00:27:48,820

the forest floor so it's it's it's an

674

00:27:52,979 --> 00:27:50,769

idea it's a science fiction idea that's

675

00:27:56,159 --> 00:27:52,989

rooted and based in real science and

676  
00:27:57,950 --> 00:27:56,169  
that was the germ no pun intended that

677  
00:28:02,659 --> 00:27:57,960  
that

678  
00:28:04,399 --> 00:28:02,669  
of having this my Sela Network being

679  
00:28:07,549 --> 00:28:04,409  
something can connect the universe you

680  
00:28:09,680 --> 00:28:07,559  
know so it's yes it's it's you know it's

681  
00:28:11,210 --> 00:28:09,690  
theoretical it's out there it's you know

682  
00:28:13,639 --> 00:28:11,220  
some people could argue that it's silly

683  
00:28:16,310 --> 00:28:13,649  
even but it's it is based on something

684  
00:28:17,750 --> 00:28:16,320  
that is real work being done in the real

685  
00:28:20,120 --> 00:28:17,760  
world and that's something that I think

686  
00:28:22,399 --> 00:28:20,130  
our writers are especially striving to

687  
00:28:24,440 --> 00:28:22,409  
do and proud of doing that they're you

688  
00:28:27,080 --> 00:28:24,450

know Paul Stamets met with the writing

689

00:28:28,880 --> 00:28:27,090

staff early on in the process and got to

690

00:28:31,310 --> 00:28:28,890

talk them at all sorts of things that

691

00:28:33,529 --> 00:28:31,320

he's working on and so I hope that we

692

00:28:36,019 --> 00:28:33,539

continue to see the exploration of the

693

00:28:38,120 --> 00:28:36,029

great work that he's doing and and how

694

00:28:41,570 --> 00:28:38,130

it gets filtered into the the work that

695

00:28:45,320 --> 00:28:41,580

my my character gets to do did I answer

696

00:28:50,060 --> 00:28:45,330

your question yes you do thank you hello

697

00:28:50,750 --> 00:28:50,070

over there yeah hi oh here sorry there

698

00:28:53,330 --> 00:28:50,760

where am I looking

699

00:28:55,039 --> 00:28:53,340

over there over there sorry hi hi I'm

700

00:28:58,519 --> 00:28:55,049

Ryan I'm an assistant professor at the

701  
00:29:00,080 --> 00:28:58,529  
University of Mississippi so I wanted to

702  
00:29:02,029 --> 00:29:00,090  
add one thing to what you said about

703  
00:29:04,130 --> 00:29:02,039  
similarities between your job as an

704  
00:29:06,230 --> 00:29:04,140  
actor and what we do as scientists and

705  
00:29:07,399 --> 00:29:06,240  
one of the things that a GU does really

706  
00:29:09,350 --> 00:29:07,409  
well and one of the things that

707  
00:29:12,590 --> 00:29:09,360  
astrobiology does really well is public

708  
00:29:14,510 --> 00:29:12,600  
outreach of science specifically giving

709  
00:29:17,210 --> 00:29:14,520  
talks about science and so what you're

710  
00:29:19,549 --> 00:29:17,220  
doing on stage I actually used to do

711  
00:29:21,289 --> 00:29:19,559  
theater when I was in college and I find

712  
00:29:23,570 --> 00:29:21,299  
that the skills that I learned when I

713  
00:29:25,399 --> 00:29:23,580

was on stage have really translated

714

00:29:27,830 --> 00:29:25,409

amazingly well into my career as a

715

00:29:30,310 --> 00:29:27,840

scientist and so I'd love to hear any of

716

00:29:32,299 --> 00:29:30,320

your comments about your thoughts about

717

00:29:34,519 --> 00:29:32,309

performance when it comes to describing

718

00:29:37,519 --> 00:29:34,529

science as one who wasn't originally in

719

00:29:39,380 --> 00:29:37,529

science or what we as scientists can do

720

00:29:41,330 --> 00:29:39,390

to better I mean I have my own opinions

721

00:29:42,830 --> 00:29:41,340

about what we as scientists can do to be

722

00:29:44,269 --> 00:29:42,840

better communicators and to give better

723

00:29:46,159 --> 00:29:44,279

talks but I'd love to hear it from a

724

00:29:48,470 --> 00:29:46,169

professional on the outside that's

725

00:29:50,120 --> 00:29:48,480

interested thank you um I think one of

726

00:29:51,919 --> 00:29:50,130

the things that was really a key for me

727

00:29:54,889 --> 00:29:51,929

in approaching the playing of this role

728

00:29:57,169 --> 00:29:54,899

is tapping and it would be true of any

729

00:29:59,060 --> 00:29:57,179

role that I play is what I call the

730

00:30:00,910 --> 00:29:59,070

heartbeat the soul of the character I

731

00:30:04,180 --> 00:30:00,920

try to get inside of the

732

00:30:06,660 --> 00:30:04,190

of you know the passions that drives the

733

00:30:10,120 --> 00:30:06,670

the meaning of this characters life and

734

00:30:11,320 --> 00:30:10,130

how I interpret how I interpreted based

735

00:30:13,120 --> 00:30:11,330

on the writing that I was given but also

736

00:30:16,600 --> 00:30:13,130

you know engaging with some of Paul's

737

00:30:19,120 --> 00:30:16,610

tamás's work is that there's an

738

00:30:22,420 --> 00:30:19,130

incredible passion for the work itself

739

00:30:27,670 --> 00:30:22,430

so that that fire that's lit by the work

740

00:30:30,340 --> 00:30:27,680

is a key for me and that it's it's about

741

00:30:32,170 --> 00:30:30,350

trying to get at the beauty and mystery

742

00:30:34,030 --> 00:30:32,180

of the universe and that's something

743

00:30:36,960 --> 00:30:34,040

that I don't have i Anthony don't have

744

00:30:39,760 --> 00:30:36,970

to have sat through you know years of of

745

00:30:41,860 --> 00:30:39,770

Astra mycology training to be able to

746

00:30:43,930 --> 00:30:41,870

understand what that might be so then

747

00:30:47,830 --> 00:30:43,940

when I'm given a script that has

748

00:30:49,150 --> 00:30:47,840

detailed lingo jargon I can easily look

749

00:30:51,010 --> 00:30:49,160

up stuff that helps me just have a

750

00:30:54,250 --> 00:30:51,020

little more of a grounding and what that

751

00:30:57,400 --> 00:30:54,260

might refer to in a literal sense but

752

00:31:00,010 --> 00:30:57,410

all of it is encased in and couched in

753

00:31:02,230 --> 00:31:00,020

the passionate need and drive for

754

00:31:04,120 --> 00:31:02,240

understanding and making a difference

755

00:31:09,370 --> 00:31:04,130

and making the universe a better place

756

00:31:12,250 --> 00:31:09,380

so I feel like possibly when scientists

757

00:31:13,810 --> 00:31:12,260

are doing their presentations and if

758

00:31:16,420 --> 00:31:13,820

public speaking or presentation is a

759

00:31:18,160 --> 00:31:16,430

part of the work that you do that of

760

00:31:19,930 --> 00:31:18,170

course the data is important and the

761

00:31:22,690 --> 00:31:19,940

information is important but if it can

762

00:31:24,940 --> 00:31:22,700

if you can you know do whatever work you

763

00:31:27,670 --> 00:31:24,950

can do to also connect it up to the

764

00:31:29,320 --> 00:31:27,680

meaning behind it and I don't mean the

765

00:31:32,650 --> 00:31:29,330

literal meaning but the sort of greater

766

00:31:34,390 --> 00:31:32,660

global philosophical whatever you would

767

00:31:36,550 --> 00:31:34,400

want to call it meaning that it gives

768

00:31:38,890 --> 00:31:36,560

rise to the desire to do it in the first

769

00:31:40,840 --> 00:31:38,900

place so that that is communicated as

770

00:31:43,240 --> 00:31:40,850

well as all the ones and zeros of it

771

00:31:44,950 --> 00:31:43,250

absolutely that sounds great and one of

772

00:31:48,910 --> 00:31:44,960

the things that I often tell people is

773

00:31:50,950 --> 00:31:48,920

that when we're talking about science

774

00:31:53,020 --> 00:31:50,960

we're telling stories and we tell

775

00:31:55,090 --> 00:31:53,030

stories in order to invite people and to

776

00:31:56,650 --> 00:31:55,100

be a part of a community and so it's not

777

00:31:58,240 --> 00:31:56,660

just the community of scientists but

778

00:31:59,440 --> 00:31:58,250

it's also the community the brotherhood

779

00:32:01,360 --> 00:31:59,450

of man and I think that's what you're

780

00:32:03,700 --> 00:32:01,370

talking about because I mean what do we

781

00:32:06,130 --> 00:32:03,710

do as human beings we sit around and we

782

00:32:09,430 --> 00:32:06,140

either tell stories or we watch other

783

00:32:10,540 --> 00:32:09,440

people on television engaging in stories

784

00:32:12,610 --> 00:32:10,550

and then we talk about it with our

785

00:32:13,630 --> 00:32:12,620

friends later yeah and so the sense of

786

00:32:14,540 --> 00:32:13,640

community that we get through

787

00:32:17,060 --> 00:32:14,550

storytelling I

788

00:32:18,890 --> 00:32:17,070

is is super important so thanks for all

789

00:32:21,320 --> 00:32:18,900

the stories you tell about science thank

790

00:32:26,840 --> 00:32:21,330

you appreciate it thank you yeah thank

791

00:32:29,570 --> 00:32:26,850

you hi hi hi Anthony I'm bill diamond

792

00:32:32,300 --> 00:32:29,580

from the SETI Institute and like our

793

00:32:33,620 --> 00:32:32,310

good friends in at NASA Ames we're also

794

00:32:35,660 --> 00:32:33,630

in Mountain View so the next time you're

795

00:32:35,960 --> 00:32:35,670

up at Ames messing around come and visit

796

00:32:38,180 --> 00:32:35,970

us

797

00:32:41,300 --> 00:32:38,190

oh and maybe give one of our SETI talks

798

00:32:43,640 --> 00:32:41,310

that would be a lot of fun I I grew up

799

00:32:47,780 --> 00:32:43,650

with the original Star Trek series and

800

00:32:50,390 --> 00:32:47,790

yeah and like many you know found that

801  
00:32:53,290 --> 00:32:50,400  
both inspiring and fun I will say that

802  
00:32:55,670 --> 00:32:53,300  
interestingly enough the whole idea of

803  
00:32:57,740 --> 00:32:55,680  
intelligent and complex and interesting

804  
00:32:59,300 --> 00:32:57,750  
life forms on other planets really

805  
00:33:01,010 --> 00:32:59,310  
didn't surprise me at all I mean it was

806  
00:33:01,940 --> 00:33:01,020  
like yeah that makes perfect sense it's

807  
00:33:07,430 --> 00:33:01,950  
completely reasonable

808  
00:33:09,320 --> 00:33:07,440  
warp drive I still struggle with to say

809  
00:33:11,510 --> 00:33:09,330  
that you can maybe fold spaces yeah

810  
00:33:14,240 --> 00:33:11,520  
folding folding space maybe something

811  
00:33:15,860 --> 00:33:14,250  
you know - flying speeder as a speeds

812  
00:33:17,630 --> 00:33:15,870  
greater than speed of light I doubt but

813  
00:33:18,170 --> 00:33:17,640

yeah folding space-time could be

814

00:33:20,300 --> 00:33:18,180

interesting

815

00:33:22,190 --> 00:33:20,310

all right anyway the problem I have with

816

00:33:23,750 --> 00:33:22,200

the Star Trek now being at the SETI

817

00:33:27,940 --> 00:33:23,760

Institute is from a SETI point of view

818

00:33:30,080 --> 00:33:27,950

it's game over you've already found

819

00:33:32,180 --> 00:33:30,090

extraterrestrial intelligence so I'm

820

00:33:33,860 --> 00:33:32,190

asking you if there's a place in a

821

00:33:36,230 --> 00:33:33,870

future Star Trek episode for what I

822

00:33:37,630 --> 00:33:36,240

would call Smitty I just made that up

823

00:33:40,190 --> 00:33:37,640

it's the search for more

824

00:33:41,390 --> 00:33:40,200

extraterrestrial intelligence like so

825

00:33:42,800 --> 00:33:41,400

you know we've got some interesting

826

00:33:44,900 --> 00:33:42,810

planet so we visited some interesting

827

00:33:46,160 --> 00:33:44,910

places now we've got some Smitty people

828

00:33:48,580 --> 00:33:46,170

on board the spacecraft because we're

829

00:33:50,450 --> 00:33:48,590

gonna look for yet more interesting

830

00:33:52,370 --> 00:33:50,460

extraterrestrial so just something to

831

00:33:55,340 --> 00:33:52,380

think about as you develop future

832

00:33:57,530 --> 00:33:55,350

programming think about yeah we hate to

833

00:33:59,240 --> 00:33:57,540

be left out yeah I appreciate that I

834

00:34:00,710 --> 00:33:59,250

mean what I can tell you is that in the

835

00:34:03,050 --> 00:34:00,720

season 3 we haven't started shooting at

836

00:34:04,430 --> 00:34:03,060

I've only seen the first two scripts so

837

00:34:07,220 --> 00:34:04,440

I really don't know what's all gonna

838

00:34:08,840 --> 00:34:07,230

happen in the next season but you know

839

00:34:11,120 --> 00:34:08,850

sorry if it's a spoiler four people

840

00:34:13,040 --> 00:34:11,130

haven't watched so far but we are season

841

00:34:15,050 --> 00:34:13,050

three picks up it's something like 900

842

00:34:16,850 --> 00:34:15,060

or a thousand years in the future far

843

00:34:18,290 --> 00:34:16,860

the lot farther in the future than has

844

00:34:22,540 --> 00:34:18,300

ever been told in the Star Trek universe

845

00:34:24,860 --> 00:34:22,550

before so I'm personally hopeful and

846

00:34:27,460 --> 00:34:24,870

think it will happen that we will

847

00:34:29,260 --> 00:34:27,470

encounter new life forms and

848

00:34:31,990 --> 00:34:29,270

and other kinds of extraterrestrial

849

00:34:34,149 --> 00:34:32,000

intelligence just because it's a new

850

00:34:37,419 --> 00:34:34,159

sandbox that our writers and designers

851  
00:34:39,070 --> 00:34:37,429  
and technicians get to play in and I'm

852  
00:34:41,070 --> 00:34:39,080  
deeply curious to see what they're going

853  
00:34:46,560 --> 00:34:41,080  
to come up with so I think there will be

854  
00:34:52,060 --> 00:34:46,570  
Smitty in our future yeah thank you

855  
00:34:52,990 --> 00:34:52,070  
hello yes hi we're gonna let him what so

856  
00:34:57,490 --> 00:34:53,000  
ever yeah

857  
00:35:00,070 --> 00:34:57,500  
hi I'm sure from Caltech I grew up on a

858  
00:35:02,200 --> 00:35:00,080  
diet of Star Trek so it's always been

859  
00:35:06,550 --> 00:35:02,210  
inspiration in my life so thanks for

860  
00:35:12,060 --> 00:35:06,560  
continuing to make great programs I

861  
00:35:15,270 --> 00:35:12,070  
wanted to just describe how I think the

862  
00:35:19,120 --> 00:35:15,280  
astrobiology in Star Trek can interact

863  
00:35:20,440 --> 00:35:19,130

yeah so the day-to-day practice of a lot

864

00:35:23,170 --> 00:35:20,450

of science can often be kind of

865

00:35:25,270 --> 00:35:23,180

methodical and mechanical users sort of

866

00:35:27,460 --> 00:35:25,280

following following a well established

867

00:35:31,900 --> 00:35:27,470

method and you know comparing stuff

868

00:35:33,910 --> 00:35:31,910

analyzing but there's also an important

869

00:35:36,099 --> 00:35:33,920

role for imagination in science and

870

00:35:39,220 --> 00:35:36,109

things like pure maths this is this is

871

00:35:40,990 --> 00:35:39,230

of and theoretical physics this is it's

872

00:35:43,630 --> 00:35:41,000

of obviously essential in astrobiology

873

00:35:45,040 --> 00:35:43,640

it's also essential but kind of for

874

00:35:47,800 --> 00:35:45,050

different reasons because we have no

875

00:35:53,230 --> 00:35:47,810

idea what we're really looking for out

876

00:35:55,150 --> 00:35:53,240

there and so I think sometimes in

877

00:35:57,450 --> 00:35:55,160

science we underestimate the value of

878

00:36:00,579 --> 00:35:57,460

artists and how much we can learn from

879

00:36:03,190 --> 00:36:00,589

artists and creative people and so I

880

00:36:06,130 --> 00:36:03,200

think when we engage with something like

881

00:36:09,670 --> 00:36:06,140

Star Trek it reminds us of what it's

882

00:36:11,920 --> 00:36:09,680

like to to to have your sort of creative

883

00:36:16,480 --> 00:36:11,930

hat on and have a a really open mind and

884

00:36:18,220 --> 00:36:16,490

let your imagination run wild and yeah

885

00:36:21,599 --> 00:36:18,230

so I think you know the more the more

886

00:36:23,680 --> 00:36:21,609

crazy the stories are the better and

887

00:36:24,910 --> 00:36:23,690

it's actually thank you for saying that

888

00:36:26,380 --> 00:36:24,920

I was it was something that it crossed

889

00:36:28,480 --> 00:36:26,390

my mind when I was thinking about you

890

00:36:29,100 --> 00:36:28,490

know what our intersections might be and

891

00:36:32,460 --> 00:36:29,110

I won

892

00:36:35,130 --> 00:36:32,470

at whether scientists ever do consider

893

00:36:37,170 --> 00:36:35,140

themselves creative in that way or

894

00:36:39,690 --> 00:36:37,180

artistic in that night what I think they

895

00:36:41,250 --> 00:36:39,700

should yeah yeah I can promise you know

896

00:36:42,540 --> 00:36:41,260

in my field there are technical things

897

00:36:44,700 --> 00:36:42,550

that even as an actor there are

898

00:36:46,320 --> 00:36:44,710

technical things and specific things and

899

00:36:48,540 --> 00:36:46,330

I mean I need to learn my lines I need

900

00:36:49,380 --> 00:36:48,550

to understand what the camera does and

901  
00:36:50,760 --> 00:36:49,390  
that you know it's certainly very

902  
00:36:52,410 --> 00:36:50,770  
helpful if I have that technical

903  
00:36:53,940 --> 00:36:52,420  
knowledge but then there is that other

904  
00:36:56,430 --> 00:36:53,950  
sort of ineffable thing that happens

905  
00:36:59,010 --> 00:36:56,440  
when it's you know when the women is

906  
00:37:00,870 --> 00:36:59,020  
sort of the the magic of it is happening

907  
00:37:03,120 --> 00:37:00,880  
but I would imagine it's not that

908  
00:37:04,830 --> 00:37:03,130  
dissimilar from from the scientific

909  
00:37:06,960 --> 00:37:04,840  
world right it's not if there's got to

910  
00:37:08,630 --> 00:37:06,970  
be some crossover yeah like this week in

911  
00:37:16,560 --> 00:37:08,640  
the evening after we've had a few drinks

912  
00:37:19,410 --> 00:37:16,570  
yeah thank you thank you that we still

913  
00:37:22,350 --> 00:37:19,420

depend a lot on the Horta from the first

914

00:37:24,060 --> 00:37:22,360

iteration of Star Trek and as a

915

00:37:26,040 --> 00:37:24,070

silicon-based life-form it was pretty

916

00:37:28,260 --> 00:37:26,050

interesting this question however is

917

00:37:29,700 --> 00:37:28,270

completely unrelated to that I'm from

918

00:37:32,460 --> 00:37:29,710

the North Shore and we have our uncle

919

00:37:33,870 --> 00:37:32,470

Buck's and our home Alone's but what do

920

00:37:36,600 --> 00:37:33,880

you think about the fact that the best

921

00:37:39,960 --> 00:37:36,610

portrayal of Joliet was in The Blues

922

00:37:41,460 --> 00:37:39,970

Brothers no can you fix that I know it's

923

00:37:43,530 --> 00:37:41,470

it's because there's a big prison there

924

00:37:45,510 --> 00:37:43,540

I mean it's just you know most people

925

00:37:47,910 --> 00:37:45,520

know Joliet because of Blues Brothers if

926

00:37:50,730 --> 00:37:47,920

they know it at all yeah I'm from Joliet

927

00:37:52,560 --> 00:37:50,740

Lionel Richie's from Joliet yeah John

928

00:37:54,180 --> 00:37:52,570

Barrowman if there's any Doctor Who fans

929

00:37:55,590 --> 00:37:54,190

who played you know Torchwood he's from

930

00:37:57,660 --> 00:37:55,600

Jim we went to high school together you

931

00:37:59,160 --> 00:37:57,670

know so there's like more than a prison

932

00:38:01,080 --> 00:37:59,170

and there's more than the blue solution

933

00:38:02,910 --> 00:38:01,090

so well we'll look forward to you

934

00:38:04,740 --> 00:38:02,920

squaring the circle later on in life

935

00:38:07,170 --> 00:38:04,750

squaring you say squaring the circle

936

00:38:09,510 --> 00:38:07,180

yeah how what does that mean again when

937

00:38:11,580 --> 00:38:09,520

you square the circle portray Joliet as

938

00:38:15,300 --> 00:38:11,590

the completely well-rounded place now it

939

00:38:18,990 --> 00:38:15,310

is yeah cool thank you yes yes hello

940

00:38:20,850 --> 00:38:19,000

hello my name is Loren I work at Woods

941

00:38:24,480 --> 00:38:20,860

Hole Oceanographic Institution

942

00:38:27,270 --> 00:38:24,490

so I come at of astrobiology from an

943

00:38:29,880 --> 00:38:27,280

ocean worlds perspective and studying

944

00:38:33,270 --> 00:38:29,890

our oceans you look at oceans on other

945

00:38:36,000 --> 00:38:33,280

worlds we were talking about stories

946

00:38:37,240 --> 00:38:36,010

earlier and I wanted to tell a story a

947

00:38:39,790 --> 00:38:37,250

short story

948

00:38:42,820 --> 00:38:39,800

I was raised by my dad and my

949

00:38:46,839 --> 00:38:42,830

grandparents and my grandfather died

950

00:38:49,330 --> 00:38:46,849

when I was 13 he didn't finish eighth

951  
00:38:51,700 --> 00:38:49,340  
grade he wasn't very educated but he was

952  
00:38:54,400 --> 00:38:51,710  
this mechanical genius he could figure

953  
00:38:57,280 --> 00:38:54,410  
out how to fix just about anything and

954  
00:39:00,430 --> 00:38:57,290  
he was fascinated by engines and I found

955  
00:39:03,370 --> 00:39:00,440  
out years after he died that he loved

956  
00:39:05,290 --> 00:39:03,380  
Star Trek the original series and that

957  
00:39:09,370 --> 00:39:05,300  
he would sit my dad down and he would

958  
00:39:13,240 --> 00:39:09,380  
say we're gonna watch Star Trek he

959  
00:39:15,040 --> 00:39:13,250  
called it Star Trek of course they would

960  
00:39:17,980 --> 00:39:15,050  
sit down together and watch this show

961  
00:39:21,700 --> 00:39:17,990  
and he was just obsessed with rockets

962  
00:39:25,660 --> 00:39:21,710  
and space travel and he never got to see

963  
00:39:29,740 --> 00:39:25,670

me become the first PhD in the family or

964

00:39:32,440 --> 00:39:29,750

go into astrobiology research but I

965

00:39:35,470 --> 00:39:32,450

think it's amazing that that legacy

966

00:39:38,740 --> 00:39:35,480

exists in our family that began with

967

00:39:41,200 --> 00:39:38,750

this show and so when you go back you

968

00:39:45,130 --> 00:39:41,210

know tell the people that you work with

969

00:39:47,800 --> 00:39:45,140

it that this show has had an impact not

970

00:39:50,320 --> 00:39:47,810

only on scientists but on the families

971

00:39:53,829 --> 00:39:50,330

of scientists and people who maybe

972

00:39:56,859 --> 00:39:53,839

didn't get to pursue those dreams but

973

00:39:58,359 --> 00:39:56,869

still saw them on this screen thank you

974

00:40:00,599 --> 00:39:58,369

so much that's very very moving very

975

00:40:03,400 --> 00:40:00,609

very meaningful thank you very all so

976

00:40:04,990 --> 00:40:03,410

it's just so cool to stand here and talk

977

00:40:08,560 --> 00:40:05,000

to you because I've loved rent since

978

00:40:13,240 --> 00:40:08,570

high school well thank you I promise I

979

00:40:15,640 --> 00:40:13,250

wouldn't sing at you thank you I love

980

00:40:17,680 --> 00:40:15,650

rent too believe me changed my life and

981

00:40:19,780 --> 00:40:17,690

in every possible way it's also that

982

00:40:21,849 --> 00:40:19,790

long secure dissuade path that took me

983

00:40:24,880 --> 00:40:21,859

to being part of Star Trek absolutely

984

00:40:26,589 --> 00:40:24,890

Brent is a huge part of that too so you

985

00:40:30,220 --> 00:40:26,599

just you know you never know how it's

986

00:40:32,800 --> 00:40:30,230

all going to wind up I was I when I was

987

00:40:35,589 --> 00:40:32,810

in the media presentation I saw this

988

00:40:38,410 --> 00:40:35,599

incredible there's moments where I was

989

00:40:40,930 --> 00:40:38,420

like so blown away by that a that I

990

00:40:44,620 --> 00:40:40,940

didn't even know this that it showed

991

00:40:46,470 --> 00:40:44,630

earth and in scale six moons around

992

00:40:48,450 --> 00:40:46,480

Earth that

993

00:40:50,220 --> 00:40:48,460

collectively have them if you put them

994

00:40:52,349 --> 00:40:50,230

all together their oceans would I can't

995

00:40:55,440 --> 00:40:52,359

remember the proportion but would out

996

00:40:59,430 --> 00:40:55,450

ocean the ocean on earth that blew my

997

00:41:01,820 --> 00:40:59,440

mind so it seems it seems perfectly

998

00:41:04,200 --> 00:41:01,830

reasonable and meaningful that that

999

00:41:06,870 --> 00:41:04,210

oceanographer would also be working in

1000

00:41:08,670 --> 00:41:06,880

astrobiology and I'm I just hope you

1001  
00:41:11,310 --> 00:41:08,680  
know I hope that selfishly I hope that

1002  
00:41:12,780 --> 00:41:11,320  
I'm alive when we find these weird

1003  
00:41:15,240 --> 00:41:12,790  
creatures whatever they might be these

1004  
00:41:17,520 --> 00:41:15,250  
microbes or or squids or whatever they

1005  
00:41:23,430 --> 00:41:17,530  
are so thank you for continuing to do

1006  
00:41:24,810 --> 00:41:23,440  
that work hello yes hello I'm Sylvia nup

1007  
00:41:28,349 --> 00:41:24,820  
I'm an undergraduate at the University

1008  
00:41:31,109 --> 00:41:28,359  
of Arkansas when I was little I watched

1009  
00:41:33,270 --> 00:41:31,119  
the original Star Trek series so I know

1010  
00:41:37,740 --> 00:41:33,280  
a little young for that but that was

1011  
00:41:39,359 --> 00:41:37,750  
that was my start um and my original my

1012  
00:41:42,030 --> 00:41:39,369  
favorite episode was definitely the one

1013  
00:41:45,450 --> 00:41:42,040

about the silicon-based life-form and I

1014

00:41:47,760 --> 00:41:45,460

really hope yeah yeah I really hoped

1015

00:41:49,560 --> 00:41:47,770

like in the future for Star Trek that

1016

00:41:52,680 --> 00:41:49,570

you'll continue to push the boundaries

1017

00:41:54,210 --> 00:41:52,690

of what could be life even if it seems a

1018

00:41:56,760 --> 00:41:54,220

little crazy at the time that's always

1019

00:41:58,470 --> 00:41:56,770

my favorite yeah I'm gonna get ichael I

1020

00:42:00,359 --> 00:41:58,480

believe that that's true part of it you

1021

00:42:02,070 --> 00:42:00,369

know it's funny and with the Horta you

1022

00:42:04,560 --> 00:42:02,080

may or might it from if I'm spoiling

1023

00:42:07,950 --> 00:42:04,570

things I'm sorry but that it there was a

1024

00:42:11,160 --> 00:42:07,960

props guy that had like a rag the

1025

00:42:13,740 --> 00:42:11,170

raggedy rug that he kind of like put

1026

00:42:16,470 --> 00:42:13,750

some styrofoam Eeyore thing blobby

1027

00:42:18,570 --> 00:42:16,480

things on and then he kind of was in it

1028

00:42:19,380 --> 00:42:18,580

and made it move around and that became

1029

00:42:20,820 --> 00:42:19,390

the hoarder

1030

00:42:22,830 --> 00:42:20,830

you know what I mean so I don't know

1031

00:42:24,330 --> 00:42:22,840

which came first if they thought like

1032

00:42:25,740 --> 00:42:24,340

we're gonna make this creature that's so

1033

00:42:27,450 --> 00:42:25,750

unlike any other creature you've seen on

1034

00:42:28,500 --> 00:42:27,460

earth or if you just like put that

1035

00:42:32,430 --> 00:42:28,510

together and said hey what do you think

1036

00:42:34,920 --> 00:42:32,440

of this you know but but yeah I mean

1037

00:42:36,630 --> 00:42:34,930

that was like such a low-budget thing I

1038

00:42:38,280 --> 00:42:36,640

don't even know in this day and age and

1039

00:42:40,980 --> 00:42:38,290

we have all these special visual effects

1040

00:42:43,859 --> 00:42:40,990

if they would even think like that but I

1041

00:42:46,560 --> 00:42:43,869

do believe that there's a desire to have

1042

00:42:49,260 --> 00:42:46,570

to expand the notion of what life could

1043

00:42:50,550 --> 00:42:49,270

look like I mean and again if this is a

1044

00:42:53,460 --> 00:42:50,560

spoiler for those who haven't seen that

1045

00:42:58,109 --> 00:42:53,470

all of the episodes I apologize but in

1046

00:43:00,690 --> 00:42:58,119

season 2 there is a spore a spore specie

1047

00:43:03,269 --> 00:43:00,700

that has intelligence that interacts

1048

00:43:05,130 --> 00:43:03,279

with Tilly that then manifests you know

1049

00:43:07,319 --> 00:43:05,140

it didn't it you know it gets into her

1050

00:43:09,809 --> 00:43:07,329

nervous system and then it manifests as

1051  
00:43:11,999 --> 00:43:09,819  
a human so that she can interact with it

1052  
00:43:14,460 --> 00:43:12,009  
but it's it's really a spore based life

1053  
00:43:17,249 --> 00:43:14,470  
form so there has been some attempt to

1054  
00:43:18,569 --> 00:43:17,259  
do it and I think that I would like to

1055  
00:43:21,089 --> 00:43:18,579  
imagine that they're going to continue

1056  
00:43:24,390 --> 00:43:21,099  
to try to find these these these ways

1057  
00:43:30,120 --> 00:43:24,400  
these these incredibly weird and

1058  
00:43:31,499 --> 00:43:30,130  
imaginative creatures thank you hi I'm

1059  
00:43:34,109 --> 00:43:31,509  
Meghan Owen man and I'm from the

1060  
00:43:38,249 --> 00:43:34,119  
University of Oklahoma I want to try to

1061  
00:43:40,349 --> 00:43:38,259  
meld rent with Star Trek here and my

1062  
00:43:42,720 --> 00:43:40,359  
husband just sent me this quote how do

1063  
00:43:45,509 --> 00:43:42,730

you document real life when real life's

1064

00:43:48,870 --> 00:43:45,519

getting more like fiction everyday yeah

1065

00:43:49,680 --> 00:43:48,880

that's a lyric yeah yeah and I I'm

1066

00:43:52,109 --> 00:43:49,690

curious

1067

00:43:54,120 --> 00:43:52,119

speaking about like the the life forms

1068

00:43:55,859 --> 00:43:54,130

we can push the boundaries there but I

1069

00:43:58,950 --> 00:43:55,869

think many of us were inspired by

1070

00:44:02,339 --> 00:43:58,960

tricorders and remote sensing techniques

1071

00:44:04,829 --> 00:44:02,349

that in many cases we can actually do in

1072

00:44:07,170 --> 00:44:04,839

the field now like we can take out an X

1073

00:44:10,019 --> 00:44:07,180

or F and shoot at Iraq and tell what's

1074

00:44:13,229 --> 00:44:10,029

in it or we can use a raman remotely to

1075

00:44:15,569 --> 00:44:13,239

look for signs of life so how can Star

1076

00:44:18,210 --> 00:44:15,579

Trek and other science fiction keep

1077

00:44:21,029 --> 00:44:18,220

pushing the boundary of technology to

1078

00:44:22,739 --> 00:44:21,039

help us as scientists really envision

1079

00:44:24,180 --> 00:44:22,749

all the fabulous things we could do

1080

00:44:26,249 --> 00:44:24,190

thank you I mean I think that that's a

1081

00:44:27,900 --> 00:44:26,259

great great question I've been one of

1082

00:44:30,150 --> 00:44:27,910

the I don't know if this is inspiring to

1083

00:44:31,950 --> 00:44:30,160

you guys or not but it you know we in

1084

00:44:34,920 --> 00:44:31,960

our in our version of Star Trek we have

1085

00:44:37,589 --> 00:44:34,930

all these hologram displays but they're

1086

00:44:39,900 --> 00:44:37,599

interactive and I would imagine it's

1087

00:44:41,489 --> 00:44:39,910

sort of like VR but it's you know unlike

1088

00:44:43,349 --> 00:44:41,499

in VR where you're cut off from your

1089

00:44:46,319 --> 00:44:43,359

fellows while you're in the virtual

1090

00:44:49,049 --> 00:44:46,329

landscape you can be inside of whatever

1091

00:44:51,089 --> 00:44:49,059

thing you're working on and turn to your

1092

00:44:52,319 --> 00:44:51,099

colleague and you can know you're both

1093

00:44:54,390 --> 00:44:52,329

looking at the same thing at the same

1094

00:44:58,319 --> 00:44:54,400

time I I don't know if that technology

1095

00:45:00,120 --> 00:44:58,329

is is meaningful or worthwhile to you

1096

00:45:02,249 --> 00:45:00,130

guys we're actually doing this kind of

1097

00:45:05,220 --> 00:45:02,259

on the field work but it's certainly

1098

00:45:08,309 --> 00:45:05,230

cool for us yeah so we can actually look

1099

00:45:10,220 --> 00:45:08,319

at large data sets now with VR like that

1100

00:45:12,470 --> 00:45:10,230

we can walk through a data set

1101

00:45:15,560 --> 00:45:12,480

it's a spatial data set or whether it's

1102

00:45:17,540 --> 00:45:15,570

a more like a quantitative data set and

1103

00:45:20,630 --> 00:45:17,550

that's really helpful to like immerse

1104

00:45:22,520 --> 00:45:20,640

yourself in your data even a man can do

1105

00:45:24,920 --> 00:45:22,530

with with other people though in real

1106

00:45:27,620 --> 00:45:24,930

time yes you can put on the VR headset

1107

00:45:28,840 --> 00:45:27,630

and walk around and spin your data and

1108

00:45:31,370 --> 00:45:28,850

look at it from different perspectives

1109

00:45:32,540 --> 00:45:31,380

or look at it with different variables

1110

00:45:34,190 --> 00:45:32,550

yeah it's really cool

1111

00:45:36,140 --> 00:45:34,200

yeah so I mean I think you know one of

1112

00:45:38,240 --> 00:45:36,150

the things that Trek is certainly

1113

00:45:39,830 --> 00:45:38,250

engaged in exploring and I think a lot

1114

00:45:41,240 --> 00:45:39,840

of science fiction writers continue to

1115

00:45:43,820 --> 00:45:41,250

you know there's all this stuff around

1116

00:45:44,990 --> 00:45:43,830

machine learning and AI and I don't know

1117

00:45:45,950 --> 00:45:45,000

all the implications that's gonna have

1118

00:45:48,020 --> 00:45:45,960

on the work you guys are doing but

1119

00:45:49,609 --> 00:45:48,030

that's something that is always

1120

00:45:53,090 --> 00:45:49,619

interesting to the right you know

1121

00:45:54,859 --> 00:45:53,100

Android technology and cyborg technology

1122

00:45:58,790 --> 00:45:54,869

and you know I don't know if that

1123

00:46:00,620 --> 00:45:58,800

applies at all to to white to stuff that

1124

00:46:03,320 --> 00:46:00,630

you're doing but I guarantee you that

1125

00:46:06,080 --> 00:46:03,330

like we have an amazing props master who

1126  
00:46:07,670 --> 00:46:06,090  
is always dreaming up things and and

1127  
00:46:11,690 --> 00:46:07,680  
presenting them to the production team

1128  
00:46:13,700 --> 00:46:11,700  
and and again I you know we're engaged

1129  
00:46:16,340 --> 00:46:13,710  
in a and we're gonna go into production

1130  
00:46:18,500 --> 00:46:16,350  
in a few weeks and so I'll be going on

1131  
00:46:20,570 --> 00:46:18,510  
set and seeing I think new brand new

1132  
00:46:21,890 --> 00:46:20,580  
things that they've come up with given

1133  
00:46:26,030 --> 00:46:21,900  
that we're going to be interacting with

1134  
00:46:27,650 --> 00:46:26,040  
a galaxy that's 900 years in the future

1135  
00:46:30,050 --> 00:46:27,660  
they're they're thinking of all kinds of

1136  
00:46:30,859 --> 00:46:30,060  
new technologies that we haven't seen

1137  
00:46:33,380 --> 00:46:30,869  
before

1138  
00:46:35,150 --> 00:46:33,390

I don't yeah I think I could say this

1139

00:46:38,660 --> 00:46:35,160

one it's you know if it's spoilery

1140

00:46:39,740 --> 00:46:38,670

I don't think CBS will sue me there one

1141

00:46:41,390 --> 00:46:39,750

of the things that they talk about in

1142

00:46:43,940 --> 00:46:41,400

the in the first script I read is it

1143

00:46:45,590 --> 00:46:43,950

this technology of I don't know what you

1144

00:46:48,140 --> 00:46:45,600

what it would be called but there's a

1145

00:46:50,660 --> 00:46:48,150

substance that you could program and

1146

00:46:53,599 --> 00:46:50,670

then it would make something in real

1147

00:46:56,480 --> 00:46:53,609

time so like say I need to have a chair

1148

00:46:59,330 --> 00:46:56,490

right over there you go and then it like

1149

00:47:01,609 --> 00:46:59,340

molds itself into a chair you know in

1150

00:47:03,770 --> 00:47:01,619

almost none instantaneously but it forms

1151

00:47:05,420 --> 00:47:03,780

itself into that and then it could you

1152

00:47:07,280 --> 00:47:05,430

could reprogram and it could mold itself

1153

00:47:09,200 --> 00:47:07,290

into something else I don't know you

1154

00:47:10,190 --> 00:47:09,210

know sort of like nanotechnology kind of

1155

00:47:11,390 --> 00:47:10,200

thing like that that's something that

1156

00:47:12,410 --> 00:47:11,400

they're that they're playing with and I

1157

00:47:14,960 --> 00:47:12,420

don't know if that's inspiring to

1158

00:47:16,340 --> 00:47:14,970

anything that you guys are doing yeah

1159

00:47:21,410 --> 00:47:16,350

cool

1160

00:47:25,840 --> 00:47:21,420

yes oh sorry hi hey I am a Tony brainy

1161

00:47:27,980 --> 00:47:25,850

from Georgia Tech and I don't know how

1162

00:47:30,830 --> 00:47:27,990

connected you are to people in the

1163

00:47:34,160 --> 00:47:30,840

writing and of things that are doing the

1164

00:47:36,650 --> 00:47:34,170

stuff to comment on this but I I noticed

1165

00:47:39,440 --> 00:47:36,660

a little bit of a funny difference

1166

00:47:42,590 --> 00:47:39,450

between the way that your series is

1167

00:47:44,900 --> 00:47:42,600

interacting with certain bits of science

1168

00:47:48,310 --> 00:47:44,910

than older series is have like in the

1169

00:47:50,180 --> 00:47:48,320

older series is you would have like big

1170

00:47:51,770 --> 00:47:50,190

concepts of science or science fiction

1171

00:47:53,600 --> 00:47:51,780

you'd have like oh here you have the

1172

00:47:55,730 --> 00:47:53,610

Dyson Sphere here you have the genetic

1173

00:47:59,180 --> 00:47:55,740

message from the past all kinds of stuff

1174

00:48:00,770 --> 00:47:59,190

in season one of your series I there was

1175

00:48:03,170 --> 00:48:00,780

a moment I burst out laughing because I

1176

00:48:08,600 --> 00:48:03,180

recognized the paper that Burnham was

1177

00:48:11,990 --> 00:48:08,610

quoting and that seems like a different

1178

00:48:14,090 --> 00:48:12,000

kind of engagement and I and I wonder if

1179

00:48:15,800 --> 00:48:14,100

you have any thoughts on the people

1180

00:48:18,220 --> 00:48:15,810

involved in doing that yeah I think that

1181

00:48:20,300 --> 00:48:18,230

I believe that the the writers are

1182

00:48:24,200 --> 00:48:20,310

working really hard they're very

1183

00:48:26,410 --> 00:48:24,210

interested in trying to ground concepts

1184

00:48:28,910 --> 00:48:26,420

that were engaged with in at least some

1185

00:48:30,710 --> 00:48:28,920

theoretical or offshoot of real

1186

00:48:32,060 --> 00:48:30,720

theoretical science if not actual

1187

00:48:34,190 --> 00:48:32,070

science and theoretical science that's

1188

00:48:35,960 --> 00:48:34,200

being done on the ground in our day and

1189

00:48:37,730 --> 00:48:35,970

age and then trying to extrapolate what

1190

00:48:39,740 --> 00:48:37,740

that might look like so I think they do

1191

00:48:42,580 --> 00:48:39,750

take that seriously you know a parent

1192

00:48:45,080 --> 00:48:42,590

this may or may not be what's the word

1193

00:48:46,880 --> 00:48:45,090

like just an anecdote but apparently

1194

00:48:49,220 --> 00:48:46,890

like when they were doing next gen or

1195

00:48:50,720 --> 00:48:49,230

voyage or one of those old series the

1196

00:48:52,070 --> 00:48:50,730

writers sometimes would literally say

1197

00:48:53,120 --> 00:48:52,080

we're just gonna make a word salad we're

1198

00:48:55,130 --> 00:48:53,130

just gonna give them like a bunch of

1199

00:48:56,900 --> 00:48:55,140

gobbledygook to say we don't care it's

1200

00:48:58,730 --> 00:48:56,910

because it just sounds technical but I

1201

00:49:01,430 --> 00:48:58,740

do believe our writers don't do that

1202

00:49:02,960 --> 00:49:01,440

they try to have the when you're when

1203

00:49:04,310 --> 00:49:02,970

we're talking about tachyons they're

1204

00:49:07,040 --> 00:49:04,320

trying to make sure that it really does

1205

00:49:09,650 --> 00:49:07,050

apply to what tachyons could or would be

1206

00:49:11,930 --> 00:49:09,660

so I haven't even though I have had a

1207

00:49:13,700 --> 00:49:11,940

lot of you know mumbo-jumbo to say

1208

00:49:16,420 --> 00:49:13,710

sometimes it when I start to do the

1209

00:49:20,030 --> 00:49:16,430

research and it is grounded in something

1210

00:49:21,620 --> 00:49:20,040

so yeah I'm not surprised that there was

1211

00:49:23,380 --> 00:49:21,630

an actual paper that they're quoting for

1212

00:49:25,180 --> 00:49:23,390

sure that doesn't surprise me at all

1213

00:49:27,460 --> 00:49:25,190

you know they're a bunch of nerds in

1214

00:49:28,870 --> 00:49:27,470

there I promise you you know and then

1215

00:49:30,430 --> 00:49:28,880

there's one writer in particular who's

1216

00:49:32,800 --> 00:49:30,440

like a deep Star Trek nerd like she

1217

00:49:33,970 --> 00:49:32,810

knows everything about all the series so

1218

00:49:36,310 --> 00:49:33,980

she's like the one that they can always

1219

00:49:38,110 --> 00:49:36,320

turn to and say does this fit with what

1220

00:49:40,120 --> 00:49:38,120

came before and if it doesn't how could

1221

00:49:42,010 --> 00:49:40,130

we make it you know I guess there's

1222

00:49:45,130 --> 00:49:42,020

squaring the circle those how can we

1223

00:49:49,870 --> 00:49:45,140

square the circle of that uh-huh cool

1224

00:49:50,770 --> 00:49:49,880

thank you oh I've been told this will be

1225

00:49:52,960 --> 00:49:50,780

our last question

1226

00:49:53,980 --> 00:49:52,970

sorry no warning but hello right well

1227

00:49:57,190 --> 00:49:53,990

perfect timing

1228

00:49:59,550 --> 00:49:57,200

I'm Diana gentry from NASA Ames Research

1229

00:50:03,370 --> 00:49:59,560

Center like many of the people who have

1230

00:50:06,100 --> 00:50:03,380

spoke my dad showed me the original Star

1231

00:50:07,690 --> 00:50:06,110

Trek on reruns when I was a kid and I

1232

00:50:09,130 --> 00:50:07,700

can say that I would not have gone into

1233

00:50:11,950 --> 00:50:09,140

science or engineering had it not been

1234

00:50:13,900 --> 00:50:11,960

for that experience it's amazing but one

1235

00:50:16,060 --> 00:50:13,910

thing that has always stood out to me

1236

00:50:18,910 --> 00:50:16,070

that is unique about Star Trek is that

1237

00:50:22,240 --> 00:50:18,920

it takes care to portray scientists and

1238

00:50:24,670 --> 00:50:22,250

engineers not just as plot devices but

1239

00:50:27,040 --> 00:50:24,680

as people who have friends and families

1240

00:50:29,320 --> 00:50:27,050

and hopes and dreams and relationships

1241

00:50:33,460 --> 00:50:29,330

that matter and I think that that is

1242

00:50:35,260 --> 00:50:33,470

incredibly valuable not only to making

1243

00:50:37,150 --> 00:50:35,270

sure that the field stays open to people

1244

00:50:39,340 --> 00:50:37,160

who are creative and think outside the

1245

00:50:42,130 --> 00:50:39,350

box but also to the way that we as a

1246

00:50:44,470 --> 00:50:42,140

society think about what science and

1247

00:50:46,750 --> 00:50:44,480

engineering can do for us and so I just

1248

00:50:48,400 --> 00:50:46,760

wanted to say thank you for portraying a

1249

00:50:51,040 --> 00:50:48,410

character that makes that real to people

1250

00:50:57,090 --> 00:50:51,050

thank you so much yeah appreciate it

1251  
00:51:03,100 --> 00:51:00,400  
so we've a little bit overstayed our

1252  
00:51:04,630 --> 00:51:03,110  
time which is great I'm sorry no no this

1253  
00:51:08,260 --> 00:51:04,640  
is fabulous and where we have a

1254  
00:51:10,420 --> 00:51:08,270  
reception afterwards but Anthony thanks

1255  
00:51:12,070 --> 00:51:10,430  
so much for for your fabulous

1256  
00:51:15,340 --> 00:51:12,080  
presentation and for all you're doing

1257  
00:51:16,960 --> 00:51:15,350  
for astrobiology and Astro mycology so

1258  
00:51:21,070 --> 00:51:16,970  
can everybody join thank you so much

1259  
00:51:24,130 --> 00:51:21,080  
thank you but um but wait that's not all

1260  
00:51:26,590 --> 00:51:24,140  
so anything before we let you go we have

1261  
00:51:34,690 --> 00:51:26,600  
a quick surprise for you so I'd like to

1262  
00:51:37,150 --> 00:51:34,700  
invite Mary Wojtek back on the stage so

1263  
00:51:37,660 --> 00:51:37,160

many of you may or may not know Aaron

1264

00:51:40,150 --> 00:51:37,670

Gronstal

1265

00:51:42,910 --> 00:51:40,160

he's the artist that originated the

1266

00:51:45,640 --> 00:51:42,920

ester biology graphic novels there's

1267

00:51:46,300 --> 00:51:45,650

gonna be a signing on Thursday Wednesday

1268

00:51:47,920 --> 00:51:46,310

whoops

1269

00:51:51,460 --> 00:51:47,930

on Thursday because I'm taking the rest

1270

00:51:54,220 --> 00:51:51,470

of No on Wednesday issue seven on

1271

00:51:58,480 --> 00:51:54,230

pre-bagged chemistry is coming out he

1272

00:52:00,610 --> 00:51:58,490

also is responsible for our logo and in

1273

00:52:08,140 --> 00:52:00,620

honor of you spending time with us

1274

00:52:09,580 --> 00:52:08,150

Anthony we've well he so many people in

1275

00:52:12,250 --> 00:52:09,590

the community are excited to find

1276

00:52:16,380 --> 00:52:12,260

themselves in our graphic histories

1277

00:52:20,740 --> 00:52:16,390

you're not in here but you're on the

1278

00:52:34,550 --> 00:52:20,750

so for people who can't see this in the

1279

00:52:44,099 --> 00:52:41,880

like the best fan art ever oh I get to

1280

00:52:47,640 --> 00:52:44,109

release you okay thank you so much for

1281

00:52:50,640 --> 00:52:47,650

joining us and yes Anthony's gonna be