



1
00:00:11,780 --> 00:00:09,200
alright well thanks for inviting me to

2
00:00:14,509 --> 00:00:11,790
be here I work at the geology museum on

3
00:00:16,580 --> 00:00:14,519
campus and if you have any time while

4
00:00:20,120 --> 00:00:16,590
you're in town you should pop on over we

5
00:00:23,179 --> 00:00:20,130
have a may be the only astrobiology

6
00:00:24,710 --> 00:00:23,189
exhibit in the country so you should

7
00:00:26,900 --> 00:00:24,720
come check it out it was part of our can

8
00:00:29,480 --> 00:00:26,910
for our original grant and now we're in

9
00:00:31,429 --> 00:00:29,490
cans six as well so if you like Mars we

10
00:00:33,830 --> 00:00:31,439
have a chunk of Mars on display first

11
00:00:38,299 --> 00:00:33,840
oldest rocks and fossils so you should

12
00:00:39,580 --> 00:00:38,309
come explore but bri asked me to give

13
00:00:42,080 --> 00:00:39,590

you just some thoughts about

14

00:00:46,029 --> 00:00:42,090

communicating to the non-specialist and

15

00:00:48,770 --> 00:00:46,039

so when we think about science outreach

16

00:00:53,889 --> 00:00:48,780

often probably what people think of our

17

00:00:56,360 --> 00:00:53,899

this guy or this guy and I'm here to

18

00:01:00,160 --> 00:00:56,370

represent the people who don't dress

19

00:01:03,560 --> 00:01:00,170

quite as well as those two gentlemen and

20

00:01:05,270 --> 00:01:03,570

while they do fantastic jobs you know

21

00:01:07,370 --> 00:01:05,280

everybody can communicate your science

22

00:01:09,859 --> 00:01:07,380

you were all scientists and I'm I want

23

00:01:13,490 --> 00:01:09,869

to give you some ideas as to how you can

24

00:01:17,450 --> 00:01:13,500

connect with your audience and use your

25

00:01:21,800 --> 00:01:17,460

powers for good and so um I'm just kind

26

00:01:23,660 --> 00:01:21,810

of curious as a informal poll who has

27

00:01:25,300 --> 00:01:23,670

done some some kind of outreach you've

28

00:01:27,710 --> 00:01:25,310

talked to the public about your work

29

00:01:30,200 --> 00:01:27,720

okay excellent what are examples of what

30

00:01:36,020 --> 00:01:30,210

you've done who have you talked to where

31

00:01:37,609 --> 00:01:36,030

have you been anyone or you can just

32

00:01:44,090 --> 00:01:37,619

boom it out I don't know if that matters

33

00:01:47,780 --> 00:01:44,100

for a talker an astronomical society in

34

00:01:53,780 --> 00:01:47,790

Salt Lake what else public talks at

35

00:01:59,749 --> 00:01:53,790

planetariums nice museums talking to

36

00:02:04,130 --> 00:01:59,759

campers science demos elementary school

37

00:02:05,929 --> 00:02:04,140

classroom any other rapes all science

38

00:02:08,930 --> 00:02:05,939

car key notes yeah science fairs are

39

00:02:11,420 --> 00:02:08,940

great talks to high school students

40

00:02:14,150 --> 00:02:11,430

excellent so I wanted to show you a few

41

00:02:18,800 --> 00:02:14,160

other examples as well so we've got um

42

00:02:22,880 --> 00:02:18,810

these are served laser pointer all right

43

00:02:24,110 --> 00:02:22,890

um so talking to kids a lot of people

44

00:02:25,490 --> 00:02:24,120

and they think about talking to public

45

00:02:28,700 --> 00:02:25,500

they immediately thought think about

46

00:02:33,260 --> 00:02:28,710

talking to kids right so here we talk to

47

00:02:35,450 --> 00:02:33,270

kids about geology we do events at local

48

00:02:37,520 --> 00:02:35,460

libraries or after school science clubs

49

00:02:41,360 --> 00:02:37,530

so this kid built his own curiosity

50

00:02:44,180 --> 00:02:41,370

rover out of candy this is something

51
00:02:46,640 --> 00:02:44,190
that our actual our grad school our grad

52
00:02:49,510 --> 00:02:46,650
students did so brie and the other grad

53
00:02:52,370 --> 00:02:49,520
students are helping host a bride con

54
00:02:55,040 --> 00:02:52,380
led an evening event here in this

55
00:02:57,620 --> 00:02:55,050
building called DIY science so adults

56
00:03:01,310 --> 00:02:57,630
pay money to come here on a date or on

57
00:03:04,220 --> 00:03:01,320
their own to do science and so we had an

58
00:03:06,920 --> 00:03:04,230
astrobiology one here in january i

59
00:03:10,070 --> 00:03:06,930
brought a puppeteer here last summer to

60
00:03:13,400 --> 00:03:10,080
do some shows at local libraries about

61
00:03:16,880 --> 00:03:13,410
ambrosia a puppet who will an alien who

62
00:03:19,910 --> 00:03:16,890
has crash-landed here on earth and then

63
00:03:22,970 --> 00:03:19,920

there's also you can do unconventional

64

00:03:26,570 --> 00:03:22,980

venues this is we did some star wars and

65

00:03:28,460 --> 00:03:26,580

astrobiology nights at the ballpark here

66

00:03:29,840 --> 00:03:28,470

we went to local music festivals and

67

00:03:33,020 --> 00:03:29,850

talked about astrobiology in your

68

00:03:35,360 --> 00:03:33,030

backyard and then there's kind of the

69

00:03:38,360 --> 00:03:35,370

classic booth set up so if you're doing

70

00:03:42,230 --> 00:03:38,370

you know a science festival or something

71

00:03:45,740 --> 00:03:42,240

like that so what I really want to get

72

00:03:48,470 --> 00:03:45,750

across to you is that communication is

73

00:03:50,240 --> 00:03:48,480

connecting with your audience and this

74

00:03:52,580 --> 00:03:50,250

holds true also for your more

75

00:03:53,990 --> 00:03:52,590

professional scientific talks but really

76

00:03:55,280 --> 00:03:54,000

in the realm of talking to the public

77

00:03:57,260 --> 00:03:55,290

they're looking at you as some kind of

78

00:03:59,090 --> 00:03:57,270

authority right you are the scientist

79

00:04:02,750 --> 00:03:59,100

and so already there's kind of this

80

00:04:06,290 --> 00:04:02,760

power differential that exists and so I

81

00:04:09,229 --> 00:04:06,300

have three main tips to try and balance

82

00:04:13,040 --> 00:04:09,239

out that power differential right so I

83

00:04:16,190 --> 00:04:13,050

don't want you to go in um you know and

84

00:04:18,949 --> 00:04:16,200

be in a situation where people are cowed

85

00:04:20,750 --> 00:04:18,959

by you it's about connecting with your

86

00:04:22,700 --> 00:04:20,760

audience and that way you're

87

00:04:25,130 --> 00:04:22,710

establishing a relationship and you'll

88

00:04:26,420 --> 00:04:25,140

get more out of them too so instead of

89

00:04:27,840 --> 00:04:26,430
you just telling them information

90

00:04:29,190 --> 00:04:27,850
they're going to ask question

91

00:04:30,900 --> 00:04:29,200
of you and you'll have a longer time

92

00:04:32,820 --> 00:04:30,910
with them perhaps and you might

93

00:04:34,410 --> 00:04:32,830
establish a relationship and get to you

94

00:04:36,630 --> 00:04:34,420
know they might email you afterwards and

95

00:04:38,400 --> 00:04:36,640
so you can continue to have that

96

00:04:39,990 --> 00:04:38,410
conversation instead of it being a one

97

00:04:43,020 --> 00:04:40,000
of where you've like brain dumped on

98

00:04:46,100 --> 00:04:43,030
them and then they glazed over and said

99

00:04:52,550 --> 00:04:46,110
thank you very much and walked away so

100

00:05:01,260 --> 00:04:57,330
don't use lingo now this is MTV puts

101
00:05:02,970 --> 00:05:01,270
together a lingo word cloud every few

102
00:05:05,280 --> 00:05:02,980
years so this is they polled Millennials

103
00:05:08,790 --> 00:05:05,290
and said one of the slang words you use

104
00:05:10,860 --> 00:05:08,800
um so don't ask me but I'm not letting

105
00:05:12,810 --> 00:05:10,870
but this is just here to represent that

106
00:05:14,220 --> 00:05:12,820
you know you may think lingo you're like

107
00:05:17,520 --> 00:05:14,230
yeah yeah I don't talk about redox

108
00:05:20,340 --> 00:05:17,530
cycling or you know microbiology you

109
00:05:22,980 --> 00:05:20,350
like don't use those words but I also

110
00:05:26,100 --> 00:05:22,990
want you to think about words like free

111
00:05:29,010 --> 00:05:26,110
biologists out there cell so to some

112
00:05:31,200 --> 00:05:29,020
people some communities cell indicates

113
00:05:35,520 --> 00:05:31,210

somebody who's in jail but you're there

114

00:05:36,780 --> 00:05:35,530

thinking about an environment and so you

115

00:05:38,760 --> 00:05:36,790

might need to think about that come

116

00:05:42,240 --> 00:05:38,770

depending on the audience you're talking

117

00:05:44,520 --> 00:05:42,250

to for you chemists out there isotope is

118

00:05:47,070 --> 00:05:44,530

a word that you sling around all the

119

00:05:48,510 --> 00:05:47,080

time but I've quizzed people in our

120

00:05:51,630 --> 00:05:48,520

Museum when we were putting together our

121

00:05:53,700 --> 00:05:51,640

exhibit I sat out in the gallery and I

122

00:05:56,580 --> 00:05:53,710

asked questions of people I had them

123

00:05:57,630 --> 00:05:56,590

read exhibit text and said you know what

124

00:06:00,840 --> 00:05:57,640

do you think people might get confused

125

00:06:03,570 --> 00:06:00,850

about with this and I would ask what

126

00:06:08,520 --> 00:06:03,580

does the word isotope mean and the

127

00:06:11,340 --> 00:06:08,530

number one answer was mmm chemistry okay

128

00:06:13,620 --> 00:06:11,350

so the general public i mean when you're

129

00:06:15,570 --> 00:06:13,630

thinking about talking with them you're

130

00:06:17,400 --> 00:06:15,580

thinking of like you know somebody who

131

00:06:19,590 --> 00:06:17,410

may have taken their last chemistry

132

00:06:22,760 --> 00:06:19,600

class in high school if you're talking

133

00:06:24,870 --> 00:06:22,770

to an adult that was a while ago and

134

00:06:26,460 --> 00:06:24,880

really paring it down to like a middle

135

00:06:32,220 --> 00:06:26,470

school level even if you're talking to

136

00:06:34,410 --> 00:06:32,230

adults for geologists plate plate uses

137

00:06:35,700 --> 00:06:34,420

you eat off of plates right we talk

138

00:06:37,260 --> 00:06:35,710

about plate tectonics we sling around

139

00:06:38,820 --> 00:06:37,270

that word it's a normal word that

140

00:06:40,650 --> 00:06:38,830

everybody you know it's not a

141

00:06:41,430 --> 00:06:40,660

complicated word to say but it has a

142

00:06:44,880 --> 00:06:41,440

different meaning

143

00:06:46,260 --> 00:06:44,890

a geologist than it does to a kid and so

144

00:06:48,180 --> 00:06:46,270

when we talk about plate tectonics in

145

00:06:49,740 --> 00:06:48,190

our Museum we actually kind of make a

146

00:06:51,540 --> 00:06:49,750

joke that we're not talking about you

147

00:06:53,310 --> 00:06:51,550

know what you eat off of what we're

148

00:06:59,520 --> 00:06:53,320

talking about these big pieces of the

149

00:07:01,200 --> 00:06:59,530

Earth's crust and one other story I met

150

00:07:02,610 --> 00:07:01,210

this woman who was talking about citizen

151

00:07:04,200 --> 00:07:02,620

science you know where you have citizens

152

00:07:07,220 --> 00:07:04,210

going out selecting data for you and

153

00:07:09,480 --> 00:07:07,230

inputting it and she was referencing a

154

00:07:12,330 --> 00:07:09,490

program that Noah does and so she's

155

00:07:14,370 --> 00:07:12,340

talking about how Noah with Noah you can

156

00:07:16,680 --> 00:07:14,380

track the weather and it'll tell you if

157

00:07:20,190 --> 00:07:16,690

it's raining and her audience was

158

00:07:22,830 --> 00:07:20,200

thinking about Noah in the Bible not not

159

00:07:24,780 --> 00:07:22,840

the National Oceanographic atmospheric

160

00:07:26,340 --> 00:07:24,790

Association like that's you know

161

00:07:29,250 --> 00:07:26,350

thinking about those words that you're

162

00:07:31,410 --> 00:07:29,260

using even NSF they probably know who

163

00:07:35,460 --> 00:07:31,420

let NASA is so that's good on you for

164

00:07:39,030 --> 00:07:35,470

being an astrobiologist okay so lingo be

165

00:07:41,130 --> 00:07:39,040

careful about lingo if you know if you

166

00:07:43,860 --> 00:07:41,140

need to step out of it you know ask a

167

00:07:45,870 --> 00:07:43,870

friend a roommate a family member family

168

00:07:47,670 --> 00:07:45,880

members are great because usually that

169

00:07:50,340 --> 00:07:47,680

they can be pretty brutally honest with

170

00:07:52,080 --> 00:07:50,350

you too and so you can ask them you know

171

00:07:53,340 --> 00:07:52,090

what does this mean to you or you know

172

00:07:56,880 --> 00:07:53,350

do you know what this word means and

173

00:07:59,880 --> 00:07:56,890

they'll tell you if they do okay number

174

00:08:02,190 --> 00:07:59,890

two is that this is not a one-way street

175

00:08:04,409 --> 00:08:02,200

and I kind of alluded to that you're not

176

00:08:05,550 --> 00:08:04,419

there to just brain dump you aren't just

177

00:08:07,290 --> 00:08:05,560

the authority who's conveying

178

00:08:09,030 --> 00:08:07,300

information I want you to think about it

179

00:08:11,880 --> 00:08:09,040

as a learning and experience for you as

180

00:08:13,470 --> 00:08:11,890

well so every time you do outreach it's

181

00:08:15,870 --> 00:08:13,480

it's almost as though you're doing an

182

00:08:17,430 --> 00:08:15,880

experiment you are getting information

183

00:08:19,650 --> 00:08:17,440

from your audience as much as you're

184

00:08:21,480 --> 00:08:19,660

giving information so you can be asking

185

00:08:24,090 --> 00:08:21,490

questions learning about misconceptions

186

00:08:28,320 --> 00:08:24,100

you know you hear a lot in the news

187

00:08:30,270 --> 00:08:28,330

about you know what people understand

188

00:08:33,870 --> 00:08:30,280

when it comes to climate change or when

189

00:08:35,159 --> 00:08:33,880

it comes to you know a lot a lot of

190

00:08:38,040 --> 00:08:35,169

different issues that are in the news

191

00:08:40,170 --> 00:08:38,050

and it's through these events that you

192

00:08:42,930 --> 00:08:40,180

can start to tease apart where people

193

00:08:45,090 --> 00:08:42,940

are getting some misconceptions where

194

00:08:47,400 --> 00:08:45,100

they have it right and so it's not about

195

00:08:48,990 --> 00:08:47,410

you know I'm right you're wrong but it's

196

00:08:52,290 --> 00:08:49,000

about you becoming a better communicator

197

00:08:53,700 --> 00:08:52,300

so you can like go forth and actually

198

00:08:54,840 --> 00:08:53,710

educate people about the things that

199

00:08:57,420 --> 00:08:54,850

there

200

00:08:59,129 --> 00:08:57,430

confused about and this is something

201
00:09:00,930 --> 00:08:59,139
that I've definitely experienced to

202
00:09:02,639 --> 00:09:00,940
where I've asked a question and you know

203
00:09:04,499 --> 00:09:02,649
kids might understand one thing really

204
00:09:06,150 --> 00:09:04,509
well and another thing that I thought

205
00:09:13,460 --> 00:09:06,160
they would have a pretty good hold on

206
00:09:17,370 --> 00:09:13,470
they don't all right and then finally um

207
00:09:19,710 --> 00:09:17,380
this is something that when you are

208
00:09:21,870 --> 00:09:19,720
talking to the public a difference

209
00:09:25,110 --> 00:09:21,880
between talking to your peers is that

210
00:09:27,090 --> 00:09:25,120
you're also representing science and so

211
00:09:29,220 --> 00:09:27,100
I want you to think about showing your

212
00:09:31,980 --> 00:09:29,230
heart and being vulnerable with that

213
00:09:34,829 --> 00:09:31,990

audience and showing them who you are

214

00:09:37,110 --> 00:09:34,839

there's a number of different studies

215

00:09:38,850 --> 00:09:37,120

and done called draw scientist maybe

216

00:09:41,340 --> 00:09:38,860

some of you have heard of these where

217

00:09:43,079 --> 00:09:41,350

they ask kids to draw a scientist and

218

00:09:44,249 --> 00:09:43,089

then they those kids get to have kind of

219

00:09:45,389 --> 00:09:44,259

a long-term relationship with a

220

00:09:47,639 --> 00:09:45,399

scientist and then they draw a

221

00:09:49,350 --> 00:09:47,649

scientists at the end and then variably

222

00:09:51,629 --> 00:09:49,360

go from like somebody who kind of looks

223

00:09:53,100 --> 00:09:51,639

like Einstein to somebody who looks like

224

00:09:56,579 --> 00:09:53,110

the person they've been working with and

225

00:09:58,980 --> 00:09:56,589

so it's your opportunity when you're

226

00:10:02,220 --> 00:09:58,990

interacting with the public to represent

227

00:10:04,559 --> 00:10:02,230

and so by opening yourself up and

228

00:10:06,809 --> 00:10:04,569

talking a little bit about yourself and

229

00:10:09,090 --> 00:10:06,819

why you are interested in the things

230

00:10:11,699 --> 00:10:09,100

that you're studying why you're invested

231

00:10:13,319 --> 00:10:11,709

in it that helps people connect to your

232

00:10:15,720 --> 00:10:13,329

subject matter instead of just diving

233

00:10:18,300 --> 00:10:15,730

right in to what it is that you're

234

00:10:20,610 --> 00:10:18,310

working on or whatever you're trying to

235

00:10:22,350 --> 00:10:20,620

convey that day you can connect with

236

00:10:24,629 --> 00:10:22,360

them share a little bit of your own

237

00:10:28,800 --> 00:10:24,639

story and that can be really powerful

238

00:10:31,110 --> 00:10:28,810

for them one great example of this Alan

239

00:10:35,129 --> 00:10:31,120

Alda Jews knew who that guys name is on

240

00:10:38,670 --> 00:10:35,139

mash when he kind of retired out of

241

00:10:40,620 --> 00:10:38,680

acting he became a real passionate

242

00:10:44,730 --> 00:10:40,630

science communicator which kind of seems

243

00:10:47,490 --> 00:10:44,740

crazy but he he's founded this Institute

244

00:10:49,850 --> 00:10:47,500

in at Stony Brook that's all about

245

00:10:52,740 --> 00:10:49,860

teaching scientists improvisation

246

00:10:55,290 --> 00:10:52,750

because his theory is that by giving you

247

00:10:57,360 --> 00:10:55,300

some kind of basic acting tools that

248

00:11:00,360 --> 00:10:57,370

you'll be able to communicate better and

249

00:11:07,650 --> 00:11:00,370

so it's very basic things like gesture

250

00:11:08,630 --> 00:11:07,660

and using facial you know changing your

251
00:11:11,300 --> 00:11:08,640
face

252
00:11:14,390 --> 00:11:11,310
and telling stories that are personal

253
00:11:17,030 --> 00:11:14,400
and so in one of my my favorites that

254
00:11:19,460 --> 00:11:17,040
I've seen recently this woman is talking

255
00:11:22,460 --> 00:11:19,470
about BPA which is the stuff everybody

256
00:11:25,610 --> 00:11:22,470
scared about in plastic and she says the

257
00:11:27,950 --> 00:11:25,620
first thing she says is um so when you

258
00:11:29,270 --> 00:11:27,960
were a baby probably you know the toys

259
00:11:31,520 --> 00:11:29,280
your favorite toys were made out of

260
00:11:33,110 --> 00:11:31,530
plastic and he interrupts her and he

261
00:11:37,220 --> 00:11:33,120
says no no no make more personal and

262
00:11:38,810 --> 00:11:37,230
she's like okay so if you had kids your

263
00:11:40,100 --> 00:11:38,820

kids probably would have plastic toys

264

00:11:41,600 --> 00:11:40,110

and he's like no no no I'll make it more

265

00:11:45,170 --> 00:11:41,610

personal Megan workers and she's like

266

00:11:46,370 --> 00:11:45,180

okay my son his toys are all plastic and

267

00:11:49,040 --> 00:11:46,380

he puts him in his mouth all the time

268

00:11:50,330 --> 00:11:49,050

and you can just see this shroud fall

269

00:11:51,680 --> 00:11:50,340

away from her and suddenly she is

270

00:11:53,690 --> 00:11:51,690

connecting with their audience she has

271

00:11:55,430 --> 00:11:53,700

her own personal investment and why she

272

00:11:58,310 --> 00:11:55,440

studies this and she studies marine

273

00:12:00,200 --> 00:11:58,320

environments and this be PA ends up in

274

00:12:01,580 --> 00:12:00,210

the marine environments and so she has

275

00:12:05,030 --> 00:12:01,590

this little introduction for how she

276
00:12:06,860 --> 00:12:05,040
ends up studying what she does and for

277
00:12:09,530 --> 00:12:06,870
all of you I mean you guys are have like

278
00:12:12,320 --> 00:12:09,540
the cream of the cream of the cream of

279
00:12:14,900 --> 00:12:12,330
things that you study you're looking for

280
00:12:17,960 --> 00:12:14,910
life and space I mean this is like super

281
00:12:21,340 --> 00:12:17,970
easy connection so talk about your own

282
00:12:23,930 --> 00:12:21,350
investment and why you do what you do

283
00:12:26,210 --> 00:12:23,940
okay so maybe you're thinking okay

284
00:12:29,810 --> 00:12:26,220
that's that all sounds good i'll do some

285
00:12:35,510 --> 00:12:29,820
more outreach um what next I i have

286
00:12:37,670 --> 00:12:35,520
three short tips one is um and I had to

287
00:12:38,780 --> 00:12:37,680
throw this in for my four-year-old who

288
00:12:42,370 --> 00:12:38,790

looked at my talk notes and he was like

289

00:12:45,310 --> 00:12:42,380

super hero so what are you doing um

290

00:12:47,720 --> 00:12:45,320

think about your strengths all right um

291

00:12:49,430 --> 00:12:47,730

who do you like talking to anyways do

292

00:12:51,350 --> 00:12:49,440

you like talking to kids maybe then you

293

00:12:53,510 --> 00:12:51,360

should talk to more kids if kids are

294

00:12:54,980 --> 00:12:53,520

kind of not you're saying maybe think

295

00:12:58,160 --> 00:12:54,990

about like I always liked talking to my

296

00:13:00,290 --> 00:12:58,170

grandpa at Christmas maybe you should go

297

00:13:04,070 --> 00:13:00,300

to a retirement home and do a

298

00:13:06,890 --> 00:13:04,080

presentation there so think about where

299

00:13:09,620 --> 00:13:06,900

what what you do already and what your

300

00:13:10,790 --> 00:13:09,630

superpower is and capitalize on that you

301

00:13:12,140 --> 00:13:10,800

don't have to I mean I know you guys

302

00:13:13,280 --> 00:13:12,150

don't have a lot of time you should you

303

00:13:14,930 --> 00:13:13,290

don't have to be worrying about like

304

00:13:16,310 --> 00:13:14,940

well I'm not very good at talking to

305

00:13:18,440 --> 00:13:16,320

preschoolers so I probably should go to

306

00:13:20,120 --> 00:13:18,450

a preschool don't worry about that if

307

00:13:21,590 --> 00:13:20,130

you as a freak you out don't go to a

308

00:13:24,499 --> 00:13:21,600

preschool

309

00:13:26,689 --> 00:13:24,509

um and then how do you like to engage

310

00:13:30,769 --> 00:13:26,699

with people do you like giving talks or

311

00:13:32,329 --> 00:13:30,779

do talks make you nervous do you like

312

00:13:34,340 --> 00:13:32,339

coming up with demos do you like to

313

00:13:37,160 --> 00:13:34,350

write maybe a blog is the right thing

314

00:13:39,860 --> 00:13:37,170

for you and so spend a little time

315

00:13:41,720 --> 00:13:39,870

thinking about how you can channel what

316

00:13:44,720 --> 00:13:41,730

you know little amount of time you have

317

00:13:48,769 --> 00:13:44,730

into something that will give you great

318

00:13:50,660 --> 00:13:48,779

rewards um think about what your

319

00:13:51,980 --> 00:13:50,670

resources are so maybe you already have

320

00:13:55,400 --> 00:13:51,990

a connection with the museum or a

321

00:13:57,129 --> 00:13:55,410

library or an elementary school you

322

00:13:59,569 --> 00:13:57,139

could do some mentoring or some tutoring

323

00:14:02,689 --> 00:13:59,579

doesn't have to be in astrobiology it

324

00:14:05,689 --> 00:14:02,699

could be in math right science fair

325

00:14:07,610 --> 00:14:05,699

judges every time you talk to your

326

00:14:09,379 --> 00:14:07,620

neighbor or you're standing in the line

327

00:14:11,269 --> 00:14:09,389

and the grocery store and you see some

328

00:14:12,680 --> 00:14:11,279

article on National Geographic that kind

329

00:14:14,059 --> 00:14:12,690

of relates and your kind of

330

00:14:15,949 --> 00:14:14,069

chit-chatting with the person next to

331

00:14:19,699 --> 00:14:15,959

you in line these are all opportunities

332

00:14:21,740 --> 00:14:19,709

you're at a party drinking beer you can

333

00:14:23,150 --> 00:14:21,750

chat I mean somebody like the number one

334

00:14:26,090 --> 00:14:23,160

thing people ask you is like so what do

335

00:14:29,329 --> 00:14:26,100

you do right have an answer for that and

336

00:14:31,550 --> 00:14:29,339

a good example yesterday I even I was

337

00:14:34,100 --> 00:14:31,560

with my kids and I saw I was chatting

338

00:14:36,139 --> 00:14:34,110

with these two ladies who are grad

339

00:14:39,259 --> 00:14:36,149

students I said so what do you do and

340

00:14:42,740 --> 00:14:39,269

one of them said Oh molecular biology

341

00:14:44,449 --> 00:14:42,750

viruses and that was that was it and I'm

342

00:14:47,389 --> 00:14:44,459

like well I know what viruses is so I I

343

00:14:49,939 --> 00:14:47,399

explained it to my kid and but if she

344

00:14:52,189 --> 00:14:49,949

had had like three sentences about what

345

00:14:53,840 --> 00:14:52,199

it is that she does that would've been

346

00:14:55,460 --> 00:14:53,850

awesome and maybe would have opened up a

347

00:14:58,519 --> 00:14:55,470

conversation between the two of us and

348

00:15:00,860 --> 00:14:58,529

so have those three sentences the

349

00:15:03,319 --> 00:15:00,870

Distilled little version I mean they've

350

00:15:06,139 --> 00:15:03,329

been called elevator speeches whatever

351

00:15:08,030 --> 00:15:06,149

it's just what you do right and you

352

00:15:11,929 --> 00:15:08,040

should be able to say it and and that's

353

00:15:14,150 --> 00:15:11,939

a point of connection you know by the

354

00:15:16,189 --> 00:15:14,160

way our conversation went it kind of

355

00:15:19,490 --> 00:15:16,199

like fell flat and we ended up not

356

00:15:24,920 --> 00:15:19,500

talking about what she does alright and

357

00:15:28,129 --> 00:15:24,930

then finally my last big tip is if

358

00:15:30,319 --> 00:15:28,139

nothing else take this away take

359

00:15:34,340 --> 00:15:30,329

pictures of yourself I never thought I'd

360

00:15:35,449 --> 00:15:34,350

be a proponent of selfies but think

361

00:15:38,929 --> 00:15:35,459

about when you're doing

362

00:15:41,119 --> 00:15:38,939

your work take a picture have somebody

363

00:15:43,489 --> 00:15:41,129

take a picture of you whether it's in

364

00:15:44,809 --> 00:15:43,499

the lab geologists kind of have it easy

365

00:15:47,929 --> 00:15:44,819

because they go do awesome things

366

00:15:50,989 --> 00:15:47,939

outside like fly helicopters dig up

367

00:15:53,019 --> 00:15:50,999

dinosaur bones but take a moment and

368

00:15:55,730 --> 00:15:53,029

have somebody to take a picture of you

369

00:15:59,540 --> 00:15:55,740

doing what you do no matter what if

370

00:16:01,340 --> 00:15:59,550

you're working on a machine to have them

371

00:16:03,889 --> 00:16:01,350

take a picture of you at the bare

372

00:16:05,389 --> 00:16:03,899

minimum I want you to think about you

373

00:16:07,819 --> 00:16:05,399

know in your department when there are

374

00:16:09,109 --> 00:16:07,829

talks you know you get the little

375

00:16:10,519 --> 00:16:09,119

abstract hanging up on the bulletin

376

00:16:12,350 --> 00:16:10,529

board as you're walking through the

377

00:16:14,329 --> 00:16:12,360

building and it has a little biopic

378

00:16:16,939 --> 00:16:14,339

there and often it's just kind of a

379

00:16:19,639 --> 00:16:16,949

classic you know like semi smiling face

380

00:16:20,960 --> 00:16:19,649

but wouldn't it be nice are you don't

381

00:16:22,579 --> 00:16:20,970

you feel more engaged when that person

382

00:16:25,040 --> 00:16:22,589

took the time to like put one of these

383

00:16:26,929 --> 00:16:25,050

photos as part of their abstract when

384

00:16:28,220 --> 00:16:26,939

they come to talk you're more likely to

385

00:16:30,470 --> 00:16:28,230

go to that person's talk because you're

386

00:16:32,929 --> 00:16:30,480

like well that's kind of cool I see them

387

00:16:34,910 --> 00:16:32,939

doing something and so take a picture

388

00:16:37,429 --> 00:16:34,920

yourself have that kind of stuff in your

389

00:16:39,650 --> 00:16:37,439

back pocket for when you are invited to

390

00:16:41,809 --> 00:16:39,660

go give a talk you can throw in a couple

391

00:16:48,980 --> 00:16:41,819

slides of you doing the work instead of

392

00:16:50,869 --> 00:16:48,990

just the work okay so that's it that's

393

00:16:55,410 --> 00:16:50,879

what I have for you try and connect with

394

00:17:04,929 --> 00:17:00,090

Thank You Brooke are there any questions

395

00:17:08,949 --> 00:17:04,939

all right Graham you're closer so I'll

396

00:17:10,960 --> 00:17:08,959

go to you first thank you that was that

397

00:17:12,610 --> 00:17:10,970

was fantastic I love science munication

398

00:17:14,710 --> 00:17:12,620

so I was like hearing these kinds of

399

00:17:16,120 --> 00:17:14,720

talks there are a bunch of people in

400

00:17:18,640 --> 00:17:16,130

this room I know who loves science

401
00:17:20,590 --> 00:17:18,650
communication and outreach several of us

402
00:17:23,559 --> 00:17:20,600
were involved in NASA's fame lab in the

403
00:17:26,319 --> 00:17:23,569
past year previous years before that the

404
00:17:28,270 --> 00:17:26,329
host of that Sean Tomiko Goldman has

405
00:17:30,130 --> 00:17:28,280
this comment he makes every time he Emma

406
00:17:31,600 --> 00:17:30,140
sees this this event and for those of

407
00:17:33,580 --> 00:17:31,610
you don't know NASA fame lab is a

408
00:17:36,039 --> 00:17:33,590
science communication competition where

409
00:17:37,870 --> 00:17:36,049
you give a three-minute talk with only

410
00:17:40,090 --> 00:17:37,880
maybe one prop in your hand and no

411
00:17:43,750 --> 00:17:40,100
slides and the idea is to convey an idea

412
00:17:46,960 --> 00:17:43,760
easily to the public so Sean the MC

413
00:17:49,090 --> 00:17:46,970

usually for this event has this idea he

414

00:17:50,350 --> 00:17:49,100

likes to share with people that a lot of

415

00:17:52,390 --> 00:17:50,360

people in science feel that we need

416

00:17:53,560 --> 00:17:52,400

another Carl Sagan we need someone else

417

00:17:54,970 --> 00:17:53,570

to be the champion of science

418

00:17:57,669 --> 00:17:54,980

communication be that one person that

419

00:17:59,680 --> 00:17:57,679

drives it forward and what Shawn points

420

00:18:01,210 --> 00:17:59,690

out and what I love about this idea and

421

00:18:03,190 --> 00:18:01,220

kind of how you started your talk

422

00:18:04,930 --> 00:18:03,200

tonight was this idea that we don't need

423

00:18:07,060 --> 00:18:04,940

just one more Carl Sagan we need

424

00:18:09,340 --> 00:18:07,070

thousands of mini Carl Sagan's we need

425

00:18:11,710 --> 00:18:09,350

all of us in our own lives expressing

426

00:18:13,299 --> 00:18:11,720

ourselves in our own special way to take

427

00:18:14,770 --> 00:18:13,309

what we have from our experiences and

428

00:18:16,990 --> 00:18:14,780

use that to share our science with

429

00:18:18,490 --> 00:18:17,000

others and so I really enjoyed hearing

430

00:18:20,530 --> 00:18:18,500

that as the very first thing you started

431

00:18:22,390 --> 00:18:20,540

with your talk tonight so thank you I

432

00:18:25,180 --> 00:18:22,400

absolutely agree with that i mean

433

00:18:27,070 --> 00:18:25,190

there's a there's a place for you know

434

00:18:29,260 --> 00:18:27,080

the neil degrasse tyson's and what not

435

00:18:31,810 --> 00:18:29,270

but you talk to people to all the time

436

00:18:33,130 --> 00:18:31,820

you know gosh thanksgiving and stick

437

00:18:36,480 --> 00:18:33,140

your neck out and try and talk about

438

00:18:39,310 --> 00:18:36,490

what it is that you do with your family

439

00:18:42,120 --> 00:18:39,320

important thing i'd like to apologize if

440

00:18:47,110 --> 00:18:42,130

I'm boring you with all my questions um

441

00:18:50,320 --> 00:18:47,120

so I was once in a coffee shop and start

442

00:18:54,549 --> 00:18:50,330

chatting with this engineer and I told

443

00:18:56,620 --> 00:18:54,559

him I saw the astrobiology and his first

444

00:19:00,730 --> 00:18:56,630

reply was but that doesn't exist is no

445

00:19:02,610 --> 00:19:00,740

life out there God made it and it caught

446

00:19:05,049 --> 00:19:02,620

me off guard because he was an engineer

447

00:19:06,520 --> 00:19:05,059

so do you have suggestions for dealing

448

00:19:08,440 --> 00:19:06,530

with people who might come in with

449

00:19:10,420 --> 00:19:08,450

preconceived notions

450

00:19:13,060 --> 00:19:10,430

like how would you want to convince them

451

00:19:16,150 --> 00:19:13,070

sure well I think that what's difficult

452

00:19:18,850 --> 00:19:16,160

is that it's not a matter of convincing

453

00:19:20,620 --> 00:19:18,860

I think the best dialogues happen when

454

00:19:24,580 --> 00:19:20,630

it's it's just two people talking from

455

00:19:26,320 --> 00:19:24,590

where they're at and so it becomes

456

00:19:28,030 --> 00:19:26,330

difficult if they are trying to convince

457

00:19:31,360 --> 00:19:28,040

you of something right that's just as

458

00:19:33,670 --> 00:19:31,370

awkward and you're like who as I'm sure

459

00:19:35,760 --> 00:19:33,680

they feel if you do the same right if

460

00:19:41,290 --> 00:19:35,770

you're like evangelizing for science and

461

00:19:43,570 --> 00:19:41,300

so um I would I mean it takes it's just

462

00:19:45,700 --> 00:19:43,580

like a clumsy thing we have this in our

463

00:19:47,200 --> 00:19:45,710

Museum all not all the time but there's

464

00:19:48,790 --> 00:19:47,210

plenty of times when creationist groups

465

00:19:51,190 --> 00:19:48,800

come in and it kind of boggles my mind

466

00:19:54,310 --> 00:19:51,200

I'm like if you wanted to argue with my

467

00:19:58,120 --> 00:19:54,320

tour guide like it would be nice to have

468

00:20:00,160 --> 00:19:58,130

a fair warning you know like but there

469

00:20:02,050 --> 00:20:00,170

are other groups that come and it's just

470

00:20:03,940 --> 00:20:02,060

like it can be a dialogue it doesn't

471

00:20:07,000 --> 00:20:03,950

have to be something that turns into a

472

00:20:09,540 --> 00:20:07,010

combative situation and if you try and

473

00:20:12,790 --> 00:20:09,550

go from that place of just curiosity and

474

00:20:15,520 --> 00:20:12,800

asking asking them questions having them

475

00:20:17,830 --> 00:20:15,530

ask you questions without that you know

476

00:20:21,130 --> 00:20:17,840

motive behind it of like I'm gonna

477

00:20:22,780 --> 00:20:21,140

convert you so I think that's the best I

478

00:20:24,310 --> 00:20:22,790

can you see this in our culture

479

00:20:25,840 --> 00:20:24,320

everywhere right like Republicans

480

00:20:27,520 --> 00:20:25,850

Democrats they're just like rah rah rah

481

00:20:30,430 --> 00:20:27,530

and they just want to yell at each other

482

00:20:32,800 --> 00:20:30,440

and you know when really we need to open

483

00:20:34,900 --> 00:20:32,810

up spaces where people can talk and so

484

00:20:36,310 --> 00:20:34,910

in in that I want to make a little I was

485

00:20:39,040 --> 00:20:36,320

going to make little handouts of like

486

00:20:41,790 --> 00:20:39,050

things to for you to check out one thing

487

00:20:44,920 --> 00:20:41,800

I would say that gets at that too is a

488

00:20:50,140 --> 00:20:44,930

radio program called on being which is

489

00:20:52,600 --> 00:20:50,150

about ethics science religion and their

490

00:20:54,490 --> 00:20:52,610

these long format interviews that the

491

00:20:56,610 --> 00:20:54,500

woman Krista Tippett she's a totally

492

00:20:59,670 --> 00:20:56,620

talented interviewer but she has people

493

00:21:01,810 --> 00:20:59,680

tons of scientists she has poets she has

494

00:21:04,120 --> 00:21:01,820

artists all these people and she has

495

00:21:06,490 --> 00:21:04,130

these long conversations with them and

496

00:21:08,140 --> 00:21:06,500

so that the way that she talks to people

497

00:21:11,140 --> 00:21:08,150

is a really organic thing and I feel

498

00:21:17,470 --> 00:21:11,150

like I'm learning more from listening to

499

00:21:21,070 --> 00:21:17,480

those podcasts I over here and so one of

500

00:21:22,240 --> 00:21:21,080

the things that I think you sort of have

501
00:21:25,120 --> 00:21:22,250
to deal with as a scientist

502
00:21:26,260 --> 00:21:25,130
is people here oh you're a scientist and

503
00:21:30,280 --> 00:21:26,270
then you're an expert on all things

504
00:21:32,200 --> 00:21:30,290
science and you know within even with in

505
00:21:33,040 --> 00:21:32,210
astrobiology I feel like we hedge a lot

506
00:21:34,630 --> 00:21:33,050
and we're like well I don't know

507
00:21:36,160 --> 00:21:34,640
anything about this thing that's only

508
00:21:39,910 --> 00:21:36,170
very slightly removed from what I

509
00:21:41,350 --> 00:21:39,920
actually do and so I mean I think on

510
00:21:43,570 --> 00:21:41,360
some level maybe we have to be more

511
00:21:45,910 --> 00:21:43,580
comfortable talking about things that

512
00:21:47,500 --> 00:21:45,920
we're not actually experts in because we

513
00:21:48,970 --> 00:21:47,510

probably know more about it then maybe

514

00:21:51,400 --> 00:21:48,980

the general public but it's also really

515

00:21:53,710 --> 00:21:51,410

hard to say something when you're not up

516

00:21:55,330 --> 00:21:53,720

on whatever the researches or whatever

517

00:22:08,770 --> 00:21:55,340

so I guess I just how do you deal with

518

00:22:11,350 --> 00:22:08,780

that and so I think that it is a bit of

519

00:22:14,230 --> 00:22:11,360

permission to like switch your brain

520

00:22:16,480 --> 00:22:14,240

into I'm talking to the public or I'm

521

00:22:18,310 --> 00:22:16,490

talking to my family or whatever mode

522

00:22:19,870 --> 00:22:18,320

where you don't have to be the expert

523

00:22:22,300 --> 00:22:19,880

and I'm sure you do know a lot more

524

00:22:24,130 --> 00:22:22,310

about I mean likely you know a lot about

525

00:22:26,490 --> 00:22:24,140

whatever it is they're asking a question

526

00:22:28,750 --> 00:22:26,500

on and so you can put some kind of like

527

00:22:30,760 --> 00:22:28,760

disclaimer in there about like well

528

00:22:33,520 --> 00:22:30,770

that's not really my area of study but

529

00:22:35,530 --> 00:22:33,530

I'll tell you what I know about it and I

530

00:22:37,660 --> 00:22:35,540

found I mean I'm the queen of like

531

00:22:40,390 --> 00:22:37,670

spreading myself thin and not being a

532

00:22:42,700 --> 00:22:40,400

specialist I have degrees in geology but

533

00:22:45,880 --> 00:22:42,710

I've been in outreach specialist for 11

534

00:22:48,160 --> 00:22:45,890

years now and so I find that people are

535

00:22:51,520 --> 00:22:48,170

just hungry you know and maybe you can

536

00:22:55,960 --> 00:22:51,530

even just give them references you know

537

00:22:57,910 --> 00:22:55,970

not paper's like you might know of a

538

00:23:00,100 --> 00:22:57,920

really great website that they could go

539

00:23:01,300 --> 00:23:00,110

to or you know you might have those

540

00:23:04,120 --> 00:23:01,310

sorts of things that you can point

541

00:23:05,800 --> 00:23:04,130

people towards but i would say i mean a

542

00:23:07,660 --> 00:23:05,810

lot of its it is about being vulnerable

543

00:23:09,880 --> 00:23:07,670

and being okay with saying i don't

544

00:23:12,040 --> 00:23:09,890

really know about that which like I know

545

00:23:14,140 --> 00:23:12,050

it's not cool to do that in a research

546

00:23:16,450 --> 00:23:14,150

group right to be like well I'm just

547

00:23:17,890 --> 00:23:16,460

gonna throw my opinion out there on this

548

00:23:23,320 --> 00:23:17,900

thing that I'm not really a specialist

549

00:23:25,090 --> 00:23:23,330

in but I think we need more of that yeah

550

00:23:29,110 --> 00:23:25,100

I'm actually going to respond to the

551

00:23:32,140 --> 00:23:29,120

last two points so first the one about

552

00:23:34,030 --> 00:23:32,150

astrobiology yeah I got gotten that too

553

00:23:34,419 --> 00:23:34,040

the problem was the first time I heard

554

00:23:36,369 --> 00:23:34,429

that

555

00:23:38,470 --> 00:23:36,379

the guy was making a joke so then the

556

00:23:41,820 --> 00:23:38,480

second time I thought he was also making

557

00:23:44,320 --> 00:23:41,830

a joke did not turn out well um

558

00:23:46,930 --> 00:23:44,330

unfortunately sometimes when people

559

00:23:48,489 --> 00:23:46,940

start getting dogmatic uh they've

560

00:23:51,100 --> 00:23:48,499

actually shown that certain parts of the

561

00:23:53,070 --> 00:23:51,110

brain are shutting down and there isn't

562

00:23:55,720 --> 00:23:53,080

an easy way to have a rational discourse

563

00:23:57,940 --> 00:23:55,730

I definitely think it's worth still

564

00:23:59,259 --> 00:23:57,950

trying and I really like what you've

565

00:24:01,570 --> 00:23:59,269

said about being vulnerable and being

566

00:24:03,249 --> 00:24:01,580

willing to make it a conversation you

567

00:24:05,529 --> 00:24:03,259

know like ask them questions about their

568

00:24:07,090 --> 00:24:05,539

their concept and their understanding

569

00:24:09,310 --> 00:24:07,100

you know I'm if you feel comfortable

570

00:24:12,190 --> 00:24:09,320

sharing your own perception if you have

571

00:24:14,980 --> 00:24:12,200

one of God or a greater power you know

572

00:24:18,489 --> 00:24:14,990

and how if anything that relates to your

573

00:24:21,519 --> 00:24:18,499

science I mean that's a tough one and if

574

00:24:23,830 --> 00:24:21,529

it's gonna be a hostile situation just

575

00:24:26,619 --> 00:24:23,840

just get out like don't bother trying to

576
00:24:30,009 --> 00:24:26,629
like defend science when someone's just

577
00:24:32,799 --> 00:24:30,019
going to try and attack you um Becky in

578
00:24:34,659 --> 00:24:32,809
relation to your question um what I've

579
00:24:37,299 --> 00:24:34,669
really discovered and this definitely

580
00:24:38,769 --> 00:24:37,309
works with kids especially is saying and

581
00:24:40,570 --> 00:24:38,779
being honest and saying you know what I

582
00:24:43,060 --> 00:24:40,580
don't know let's figure that out

583
00:24:44,470 --> 00:24:43,070
together and doing whatever you can to

584
00:24:46,119 --> 00:24:44,480
help figure it out together so you can

585
00:24:47,379 --> 00:24:46,129
start from basic principles like if it's

586
00:24:49,539 --> 00:24:47,389
something in a field you're not familiar

587
00:24:51,639 --> 00:24:49,549
with you know like start with whatever

588
00:24:53,710 --> 00:24:51,649

basic principles you remember from even

589

00:24:56,139 --> 00:24:53,720

high school you know if it's like really

590

00:24:59,019 --> 00:24:56,149

far removed from like the science you do

591

00:25:01,359 --> 00:24:59,029

now and even going on to like Wikipedia

592

00:25:03,070 --> 00:25:01,369

figuring out there's anyone you know who

593

00:25:05,320 --> 00:25:03,080

especially in astrobiology community

594

00:25:06,730 --> 00:25:05,330

like this you you meet people you know

595

00:25:08,109 --> 00:25:06,740

who you can say you know what I don't

596

00:25:09,580 --> 00:25:08,119

know but I think if you talk to my

597

00:25:13,029 --> 00:25:09,590

friend Jenica she might know the answer

598

00:25:14,710 --> 00:25:13,039

to that you know and um I'm just kind of

599

00:25:17,109 --> 00:25:14,720

starting that is a grill a good place

600

00:25:18,879 --> 00:25:17,119

just to encourage a curiosity and

601
00:25:21,220 --> 00:25:18,889
recognize and like admit that you know

602
00:25:24,399 --> 00:25:21,230
what like we're not experts on all

603
00:25:26,409 --> 00:25:24,409
things science yeah I just want to

604
00:25:27,999 --> 00:25:26,419
especially comment on how I really

605
00:25:29,560 --> 00:25:28,009
appreciated kind of your thing about

606
00:25:31,239 --> 00:25:29,570
conversation I've discovered that what

607
00:25:34,739 --> 00:25:31,249
really works with kids and adults is

608
00:25:36,759 --> 00:25:34,749
even starting presentations not as like

609
00:25:39,100 --> 00:25:36,769
presentation so much is by asking

610
00:25:41,019 --> 00:25:39,110
questions and getting them to share

611
00:25:41,880 --> 00:25:41,029
their ideas or concepts about a certain

612
00:25:43,680 --> 00:25:41,890
thing

613
00:25:46,260 --> 00:25:43,690

and that that way you get them into

614

00:25:47,880 --> 00:25:46,270

involved in the entire talk and thinking

615

00:25:50,640 --> 00:25:47,890

about things in a new way almost as a

616

00:25:54,000 --> 00:25:50,650

scientist would know I think that's

617

00:25:55,260 --> 00:25:54,010

really true i've worked with second and

618

00:25:59,490 --> 00:25:55,270

third graders in like an after-school

619

00:26:03,180 --> 00:25:59,500

club and I I went in you know gung ho to

620

00:26:06,780 --> 00:26:03,190

teach about Rovers and Landers on Mars

621

00:26:08,940 --> 00:26:06,790

and I was a few weeks in and I felt like

622

00:26:10,530 --> 00:26:08,950

we still weren't like quite there like

623

00:26:12,210 --> 00:26:10,540

they just weren't I didn't know what was

624

00:26:13,680 --> 00:26:12,220

going on but it didn't seem like they

625

00:26:17,790 --> 00:26:13,690

really understood what was going on and

626

00:26:21,090 --> 00:26:17,800

then one of them out of the blue was

627

00:26:23,280 --> 00:26:21,100

like oh it's like wall-e which that's

628

00:26:25,620 --> 00:26:23,290

very good watch tonight but and suddenly

629

00:26:28,170 --> 00:26:25,630

they all understood what was going on

630

00:26:31,680 --> 00:26:28,180

like that was their connection point was

631

00:26:33,120 --> 00:26:31,690

like Wally but you know and it's not I

632

00:26:35,310 --> 00:26:33,130

think this is another thing that you

633

00:26:37,200 --> 00:26:35,320

have to kind of like step into a

634

00:26:38,760 --> 00:26:37,210

vulnerable place because like the things

635

00:26:41,490 --> 00:26:38,770

the ways you talk to children especially

636

00:26:42,720 --> 00:26:41,500

and oftentimes to adults too you're

637

00:26:45,450 --> 00:26:42,730

going to be making analogies that are

638

00:26:47,790 --> 00:26:45,460

not quite right and you have to be okay

639

00:26:51,150 --> 00:26:47,800

with that like it's not like Wally is

640

00:26:53,100 --> 00:26:51,160

not like curiosity really but it's you

641

00:26:54,660 --> 00:26:53,110

know it's in the right direction and so

642

00:26:57,060 --> 00:26:54,670

then you can start heading down and

643

00:26:59,820 --> 00:26:57,070

after that like we were on a roll and we

644

00:27:01,710 --> 00:26:59,830

could really learn about curiosity but

645

00:27:04,470 --> 00:27:01,720

before that it just I could tell there

646

00:27:06,450 --> 00:27:04,480

was something off and so it is it can be

647

00:27:07,950 --> 00:27:06,460

yet you just have to be humble and ask

648

00:27:12,870 --> 00:27:07,960

questions until you figure out what that

649

00:27:16,050 --> 00:27:12,880

thing is I've got a quick question uh

650

00:27:19,050 --> 00:27:16,060

what's the job market like for outreach

651
00:27:23,600 --> 00:27:19,060
specialists and what skills do people

652
00:27:25,980 --> 00:27:23,610
look for an outreach specialist um I

653
00:27:27,720 --> 00:27:25,990
really lucked out to be in my job I

654
00:27:30,210 --> 00:27:27,730
don't have a great sense because I

655
00:27:31,590 --> 00:27:30,220
didn't have to search much I went to

656
00:27:34,950 --> 00:27:31,600
graduate school here I had been a tour

657
00:27:36,390 --> 00:27:34,960
guide in the department and then decided

658
00:27:38,720 --> 00:27:36,400
to stay in Madison lots of people decide

659
00:27:41,730 --> 00:27:38,730
to stay here because it's awesome and

660
00:27:43,260 --> 00:27:41,740
went to the then director and said do

661
00:27:44,850 --> 00:27:43,270
you know about any jobs around in

662
00:27:47,760 --> 00:27:44,860
Madison not expecting to get one at that

663
00:27:52,470 --> 00:27:47,770

museum and it worked out i would say

664

00:27:54,810 --> 00:27:52,480

that likely the the avenue in for a lot

665

00:27:55,180 --> 00:27:54,820

of places is affiliation with a grant so

666

00:27:56,980 --> 00:27:55,190

you

667

00:27:59,080 --> 00:27:56,990

on soft money for a while and then like

668

00:28:02,440 --> 00:27:59,090

you became you really kind of like make

669

00:28:03,970 --> 00:28:02,450

yourself indispensable and then you know

670

00:28:05,890 --> 00:28:03,980

somebody's position opens up and you get

671

00:28:08,950 --> 00:28:05,900

that position but I think for a lot of

672

00:28:11,230 --> 00:28:08,960

people it's kind of a you know a little

673

00:28:13,510 --> 00:28:11,240

touch-and-go for a while because of soft

674

00:28:18,820 --> 00:28:13,520

money but the great thing about that is

675

00:28:20,890 --> 00:28:18,830

that NASA especially and the NSF take

676

00:28:23,530 --> 00:28:20,900

broader impacts pretty seriously i would

677

00:28:24,700 --> 00:28:23,540

say NASA very much though it seems like

678

00:28:28,260 --> 00:28:24,710

every year there's a different budget

679

00:28:31,510 --> 00:28:28,270

crisis that happens with them and so

680

00:28:33,730 --> 00:28:31,520

it's it's heartening to know that even

681

00:28:35,920 --> 00:28:33,740

if you decide to I mean if you don't go

682

00:28:37,900 --> 00:28:35,930

into outreach specifically as a

683

00:28:41,380 --> 00:28:37,910

scientist there's lots of different ways

684

00:28:43,150 --> 00:28:41,390

that you get to do this whether it's

685

00:28:44,890 --> 00:28:43,160

collaborating with somebody like me or

686

00:28:48,370 --> 00:28:44,900

doing it on your own and there's lots of

687

00:28:54,360 --> 00:28:48,380

opportunities there but yeah I don't

688

00:28:59,080 --> 00:28:57,490

that's it for the communication session