

**The Skeptic Zone**  
**Show 328 - 30 Jan 2015**



**Eugenie Scott    Ann Reid**

1  
00:00:22,300 --> 00:00:09,089  
welcome to the skeptic zone the podcast

2  
00:00:26,510 --> 00:00:24,890  
hello and welcome to the skeptic Sir

3  
00:00:29,000 --> 00:00:26,520  
Richard Saunders here with you from the

4  
00:00:33,470 --> 00:00:29,010  
Bay Area San Francisco this is shown

5  
00:00:36,049 --> 00:00:33,480  
number 328 for the 30th of January 2015

6  
00:00:38,210 --> 00:00:36,059  
and for those of you who take notice of

7  
00:00:40,580 --> 00:00:38,220  
this sort of thing yes this show is out

8  
00:00:42,380 --> 00:00:40,590  
a couple of days early that's because

9  
00:00:44,479 --> 00:00:42,390  
then the show should be normally going

10  
00:00:46,729 --> 00:00:44,489  
out I'm going to be somewhere I want to

11  
00:00:49,040 --> 00:00:46,739  
know between Hawaii and Fiji flying back

12  
00:00:51,470 --> 00:00:49,050  
to Sydney coming up on this week's show

13  
00:00:53,990 --> 00:00:51,480

gonna kick off with evidence please with

14

00:00:58,270 --> 00:00:54,000

Joe alabasta Joe will bring us up to

15

00:01:00,979 --> 00:00:58,280

date on the Tenpenny debacle fiasco

16

00:01:04,939 --> 00:01:00,989

ludicrous situation the tour has been

17

00:01:06,140 --> 00:01:04,949

canceled it seems Nova Cherie Tenpenny

18

00:01:08,420 --> 00:01:06,150

who's going to come out and tell people

19

00:01:12,950 --> 00:01:08,430

why they shouldn't vaccinate Oh dearie

20

00:01:14,870 --> 00:01:12,960

me latest news with Joe alabaster coming

21

00:01:17,300 --> 00:01:14,880

up and I can tell you in the United

22

00:01:21,380 --> 00:01:17,310

States right now more and more outbreaks

23

00:01:23,450 --> 00:01:21,390

of measles the anti-vaxxers must be so

24

00:01:25,790 --> 00:01:23,460

happy following that I visit the

25

00:01:27,650 --> 00:01:25,800

National Center for Science Education in

26

00:01:30,320 --> 00:01:27,660

Oakland and chat to my old friend

27

00:01:33,830 --> 00:01:30,330

Eugenie Scott and the new executive

28

00:01:36,710 --> 00:01:33,840

director of the the center and read a

29

00:01:39,050 --> 00:01:36,720

really interesting interview I spend

30

00:01:41,450 --> 00:01:39,060

time with these two fascinating women at

31

00:01:44,180 --> 00:01:41,460

the National Center for Science

32

00:01:46,190 --> 00:01:44,190

Education find out more with that

33

00:01:47,540 --> 00:01:46,200

interview coming up following that it's

34

00:01:51,260 --> 00:01:47,550

a week in science from the Royal

35

00:01:53,960 --> 00:01:51,270

Institution of Australia w WR I a u.s.

36

00:01:57,020 --> 00:01:53,970

dog may you then to round off the show

37

00:02:00,760 --> 00:01:57,030

Maynard spooky action main our chats to

38

00:02:02,630 --> 00:02:00,770

Dr Grant Hill courthorne a medical

39

00:02:05,960 --> 00:02:02,640

microbiologist and lecturer in

40

00:02:09,619 --> 00:02:05,970

communicable diseases good grief he's

41

00:02:11,570 --> 00:02:09,629

going to be chatting about Ebola find

42

00:02:13,790 --> 00:02:11,580

out about Ebola coming up at the end of

43

00:02:17,270 --> 00:02:13,800

the show but before we get on I'm really

44

00:02:19,280 --> 00:02:17,280

really pleased to see that the more tea

45

00:02:21,380 --> 00:02:19,290

skeptics down there in Victoria just

46

00:02:24,290 --> 00:02:21,390

sort of south of melbourne wow they are

47

00:02:26,960 --> 00:02:24,300

so active and I've got a great lineup of

48

00:02:29,089 --> 00:02:26,970

speakers this year already in fact on

49

00:02:30,809 --> 00:02:29,099

februari the third they've got dr. ken

50

00:02:34,500 --> 00:02:30,819

harvey talking about homeopathy

51  
00:02:37,170 --> 00:02:34,510  
on March the 16th is our old friend

52  
00:02:39,420 --> 00:02:37,180  
Joanne Ben amoud talking about human

53  
00:02:41,940 --> 00:02:39,430  
rights and then on July the seventh will

54  
00:02:44,789 --> 00:02:41,950  
be dr. Meredith stoic so many good

55  
00:02:48,599 --> 00:02:44,799  
people look just Google Morty skeptics

56  
00:02:50,610 --> 00:02:48,609  
mo RDI skeptics in the pub to visit

57  
00:02:52,770 --> 00:02:50,620  
their meetup page and if you're in that

58  
00:02:55,679 --> 00:02:52,780  
neck of the woods I reckon you should go

59  
00:02:57,959 --> 00:02:55,689  
along but now it's time for me to hmm

60  
00:03:01,319 --> 00:02:57,969  
run to the fridge and see if there's any

61  
00:03:04,080 --> 00:03:01,329  
clam chowder left Wow if you ever visit

62  
00:03:07,500 --> 00:03:04,090  
the san francisco bay area folks the

63  
00:03:09,470 --> 00:03:07,510

clam chowder in the sourdough bowl you

64

00:03:12,449 --> 00:03:09,480

eat the chowder than you eat the bowl

65

00:03:32,210 --> 00:03:12,459

pretty damn good well I'm doing that I

66

00:03:41,640 --> 00:03:34,340

what we want is some more evidence

67

00:03:41,650 --> 00:03:47,180

hello this is Joe alabaster

68

00:03:51,770 --> 00:03:49,850

a couple of weeks ago I reported on and

69

00:03:53,990 --> 00:03:51,780

he that seemed advocate sherry ten

70

00:03:57,890 --> 00:03:54,000

pennies plan speaking tour of Australia

71

00:04:00,020 --> 00:03:57,900

and the stock Tenpenny campaign well

72

00:04:01,790 --> 00:04:00,030

there are been some developments and at

73

00:04:04,100 --> 00:04:01,800

the risk of breaking continuity and

74

00:04:06,710 --> 00:04:04,110

potentially the space-time continuum who

75

00:04:09,650 --> 00:04:06,720

knows the big news first on the

76

00:04:11,930 --> 00:04:09,660

twenty-eighth of January 2015 cherry

77

00:04:13,760 --> 00:04:11,940

Tenpenny and tour organizer Stephanie

78

00:04:15,680 --> 00:04:13,770

messenger announced that they had

79

00:04:18,020 --> 00:04:15,690

cancelled their series of Australian

80

00:04:20,210 --> 00:04:18,030

seminars I left off my report on the

81

00:04:22,160 --> 00:04:20,220

11th of January with news that all but

82

00:04:23,750 --> 00:04:22,170

two of the venue's scheduled to host ten

83

00:04:27,500 --> 00:04:23,760

pennies events had cancelled their

84

00:04:29,720 --> 00:04:27,510

bookings on January the 14th Michael's

85

00:04:31,220 --> 00:04:29,730

oriental restaurant in Brisbane made the

86

00:04:34,160 --> 00:04:31,230

announcement that they're no longer be

87

00:04:36,080 --> 00:04:34,170

hosting sherry Tenpenny then on January

88

00:04:37,820 --> 00:04:36,090

nineteenth an announcement appeared on

89

00:04:39,560 --> 00:04:37,830

the event page for the seminar to be

90

00:04:41,660 --> 00:04:39,570

held at rydges South Park Adelaide

91

00:04:45,100 --> 00:04:41,670

saying that the venue had cancelled the

92

00:04:48,560 --> 00:04:45,110

booking from the eventbrite page quote

93

00:04:50,360 --> 00:04:48,570

important notice the venue has cancelled

94

00:04:52,850 --> 00:04:50,370

our booking due to bullying by vested

95

00:04:55,280 --> 00:04:52,860

interests who do not believe in informed

96

00:04:57,320 --> 00:04:55,290

consent free speech and respect for

97

00:04:59,659 --> 00:04:57,330

others rights and who appear to support

98

00:05:02,300 --> 00:04:59,669

censorship of thought and science and

99

00:05:04,580 --> 00:05:02,310

new venue is being sought now so please

100

00:05:07,370 --> 00:05:04,590

book your ticket you'll be notified of

101  
00:05:11,630 --> 00:05:07,380  
the new venue in due time thank you and

102  
00:05:13,520 --> 00:05:11,640  
quote indeed the organizers of the event

103  
00:05:15,710 --> 00:05:13,530  
was still encouraging people to buy

104  
00:05:18,890 --> 00:05:15,720  
tickets despite the fact that every

105  
00:05:20,420 --> 00:05:18,900  
venue had pulled out meanwhile those

106  
00:05:21,980 --> 00:05:20,430  
who'd already bought tickets to the

107  
00:05:24,590 --> 00:05:21,990  
seminars were left with little

108  
00:05:26,690 --> 00:05:24,600  
information as to what was going on no

109  
00:05:28,820 --> 00:05:26,700  
emails were sent nor announcements made

110  
00:05:32,630 --> 00:05:28,830  
beyond the one i just read which was

111  
00:05:35,140 --> 00:05:32,640  
placed on each Eventbrite event page the

112  
00:05:37,370 --> 00:05:35,150  
media coverage was equally as ambiguous

113  
00:05:39,680 --> 00:05:37,380

Tenpenny herself appeared on The Today

114

00:05:41,420 --> 00:05:39,690

Show in which he referred to those who

115

00:05:44,330 --> 00:05:41,430

have campaigned against her seminars in

116

00:05:46,960 --> 00:05:44,340

Australia as extremists and mentioned

117

00:05:49,580 --> 00:05:46,970

that bomb threats had been received in

118

00:05:52,220 --> 00:05:49,590

fact sherry Tenpenny as mentioned bomb

119

00:05:53,990 --> 00:05:52,230

threats repeatedly to the media bomb

120

00:05:55,640 --> 00:05:54,000

threats are rather serious and ought to

121

00:05:57,440 --> 00:05:55,650

be treated as such and of course

122

00:06:00,050 --> 00:05:57,450

reported to the authorities for

123

00:06:00,920 --> 00:06:00,060

investigation the bomb threat that I

124

00:06:02,600 --> 00:06:00,930

have witnessed

125

00:06:04,790 --> 00:06:02,610

and several people have made screenshots

126  
00:06:07,010 --> 00:06:04,800  
of was left in a comment on the facebook

127  
00:06:10,159 --> 00:06:07,020  
page of michael's oriental restaurant

128  
00:06:11,689 --> 00:06:10,169  
i'm going to read it verbatim here so

129  
00:06:15,770 --> 00:06:11,699  
i'll need richard to step in with the

130  
00:06:18,740 --> 00:06:15,780  
bleep here we go quote nature will take

131  
00:06:22,070 --> 00:06:18,750  
its cause in you psychopath you dead

132  
00:06:26,090 --> 00:06:22,080  
troll walking too bad if the place gets

133  
00:06:28,360 --> 00:06:26,100  
blown up with a bomb and quote now

134  
00:06:30,680 --> 00:06:28,370  
that's not an okay thing to say

135  
00:06:32,570 --> 00:06:30,690  
unfortunately when Tenpenny is referred

136  
00:06:35,210 --> 00:06:32,580  
to the bomb threat she's admitted

137  
00:06:38,600 --> 00:06:35,220  
mentioning who it came from one of her

138  
00:06:40,460 --> 00:06:38,610

supporters the gentleman in question has

139

00:06:43,029 --> 00:06:40,470

a rather substantial history of making

140

00:06:45,379 --> 00:06:43,039

threats to vaccination advocates

141

00:06:46,580 --> 00:06:45,389

presumably he was angry at the prospect

142

00:06:48,439 --> 00:06:46,590

of Michael's oriental restaurant

143

00:06:51,260 --> 00:06:48,449

potentially cancelling 10 pennies

144

00:06:53,300 --> 00:06:51,270

booking now I'm not willing to judge all

145

00:06:55,909 --> 00:06:53,310

of Tampines supporters by the actions of

146

00:06:57,890 --> 00:06:55,919

one person all sorts of people take up

147

00:06:59,600 --> 00:06:57,900

causes without necessarily behaving in

148

00:07:02,779 --> 00:06:59,610

ways that are approved off by others who

149

00:07:05,420 --> 00:07:02,789

they campaign alongside however I am

150

00:07:07,279 --> 00:07:05,430

extremely disappointed that sherry tone

151

00:07:08,839 --> 00:07:07,289

penny has decided it's acceptable to

152

00:07:10,820 --> 00:07:08,849

tell the media the bomb threats have

153

00:07:13,610 --> 00:07:10,830

been made without disclosing that they

154

00:07:15,620 --> 00:07:13,620

were made by one of her supporters this

155

00:07:17,540 --> 00:07:15,630

omission alongside claims that those

156

00:07:20,480 --> 00:07:17,550

have campaigned against her seminars are

157

00:07:22,189 --> 00:07:20,490

extremists and terrorists suggest to the

158

00:07:24,680 --> 00:07:22,199

public that one of her critics made the

159

00:07:27,760 --> 00:07:24,690

bomb threat and I find this disingenuous

160

00:07:29,870 --> 00:07:27,770

to the extreme some media outlets have

161

00:07:32,409 --> 00:07:29,880

unfortunately run with the bomb threat

162

00:07:34,460 --> 00:07:32,419

story without diligent investigation I'm

163

00:07:36,499 --> 00:07:34,470

heartened though that others have looked

164

00:07:38,480 --> 00:07:36,509

into the issue further witnessed the

165

00:07:41,210 --> 00:07:38,490

threat itself in its context and have

166

00:07:42,980 --> 00:07:41,220

reported accurately the bomb threat was

167

00:07:44,779 --> 00:07:42,990

featured in a press release made by

168

00:07:48,830 --> 00:07:44,789

sherry Tenpenny on the twenty-eighth of

169

00:07:51,260 --> 00:07:48,840

january titled quote dr. sherry Tenpenny

170

00:07:54,890 --> 00:07:51,270

speaking to her canceled for reasons of

171

00:07:56,749 --> 00:07:54,900

safety and security and quote you know

172

00:07:59,149 --> 00:07:56,759

I've been watching the stock temp any

173

00:08:01,010 --> 00:07:59,159

campaign fairly closely and I've not

174

00:08:03,860 --> 00:08:01,020

witnessed any threats of violence coming

175

00:08:05,719 --> 00:08:03,870

from vaccination advocates if I ever do

176

00:08:08,180 --> 00:08:05,729

witness such or condemn it incredibly

177

00:08:11,089 --> 00:08:08,190

strongly threats and intimidation are

178

00:08:14,480 --> 00:08:11,099

utterly unacceptable any such behaviors

179

00:08:17,839 --> 00:08:16,010

but I have witnessed our community

180

00:08:20,689 --> 00:08:17,849

members coming together to campaign

181

00:08:22,400 --> 00:08:20,699

against anti-vaccination seminars which

182

00:08:24,890 --> 00:08:22,410

would have miss informed parents and

183

00:08:27,740 --> 00:08:24,900

parents-to-be on how to best protect the

184

00:08:29,600 --> 00:08:27,750

health of their children they've done so

185

00:08:31,870 --> 00:08:29,610

via social media petitions

186

00:08:34,040 --> 00:08:31,880

letter-writing to venues and MPs

187

00:08:36,680 --> 00:08:34,050

collating publicly available information

188

00:08:40,459 --> 00:08:36,690

and blocking it and engaging with the

189

00:08:42,769 --> 00:08:40,469

media to then have that characterized as

190

00:08:45,290 --> 00:08:42,779

a hateful campaign involving terrorism

191

00:08:47,180 --> 00:08:45,300

and extremism to be compared with the

192

00:08:51,139 --> 00:08:47,190

Charlie Hebdo killers in Paris and the

193

00:08:52,579 --> 00:08:51,149

gunman behind the Sydney siege well how

194

00:08:54,790 --> 00:08:52,589

else are those who have had to back down

195

00:08:57,500 --> 00:08:54,800

going to frame their decision to do so

196

00:08:59,180 --> 00:08:57,510

claiming persecution perhaps fits their

197

00:09:00,829 --> 00:08:59,190

self and public images better than

198

00:09:02,329 --> 00:09:00,839

having to admit that an overwhelming

199

00:09:04,370 --> 00:09:02,339

number of Australians are willing to

200

00:09:09,139 --> 00:09:04,380

stand up and say no to the spread of

201  
00:09:11,000 --> 00:09:09,149  
misinformation that harms children I'd

202  
00:09:12,710 --> 00:09:11,010  
like to finish off with a few excerpts

203  
00:09:13,940 --> 00:09:12,720  
from Stephanie messengers public

204  
00:09:17,389 --> 00:09:13,950  
announcement that the tour has been

205  
00:09:19,880 --> 00:09:17,399  
canceled to be frank I find some a bit

206  
00:09:21,889 --> 00:09:19,890  
of little bizarre and I'm glad that she

207  
00:09:23,690 --> 00:09:21,899  
posted it as perhaps a few people who

208  
00:09:25,370 --> 00:09:23,700  
came to hear of sherry Tenpenny and

209  
00:09:27,319 --> 00:09:25,380  
stephanie messenger via the media

210  
00:09:29,120 --> 00:09:27,329  
coverage of the now-canceled to her

211  
00:09:31,250 --> 00:09:29,130  
we'll have a look at where stephanie

212  
00:09:34,269 --> 00:09:31,260  
messenger is coming from and find it a

213  
00:09:40,370 --> 00:09:34,279

little less likely to be evidence-based

214

00:09:42,470 --> 00:09:40,380

from stephanie messenger quote with the

215

00:09:44,870 --> 00:09:42,480

pro vaccine extremists running their

216

00:09:47,269 --> 00:09:44,880

campaign of hate intimidation bullying

217

00:09:49,400 --> 00:09:47,279

sabotage of businesses and threats of

218

00:09:52,280 --> 00:09:49,410

violence we could not in good conscience

219

00:09:53,990 --> 00:09:52,290

put the attendees speakers and new venue

220

00:09:57,319 --> 00:09:54,000

owners at risk of violence and

221

00:09:59,269 --> 00:09:57,329

harassment we are mindful that at each

222

00:10:01,010 --> 00:09:59,279

seminar they were already people booked

223

00:10:02,930 --> 00:10:01,020

in who are bringing babies and children

224

00:10:04,910 --> 00:10:02,940

along and as we were all about

225

00:10:06,710 --> 00:10:04,920

protecting babies and children we are

226

00:10:08,930 --> 00:10:06,720

not willing to go ahead and risk their

227

00:10:10,940 --> 00:10:08,940

safety when you are dealing with

228

00:10:12,829 --> 00:10:10,950

extremists you just never know what

229

00:10:14,990 --> 00:10:12,839

they're capable of doing as we have

230

00:10:17,690 --> 00:10:15,000

recently seen with the Sydney siege and

231

00:10:21,560 --> 00:10:17,700

also the Paris violence against free

232

00:10:24,430 --> 00:10:21,570

speech these Pro vaccine extremists are

233

00:10:26,900 --> 00:10:24,440

actually terrorists against free speech

234

00:10:27,740 --> 00:10:26,910

they're against people accessing all

235

00:10:29,390 --> 00:10:27,750

information

236

00:10:32,180 --> 00:10:29,400

make an informed decision regarding this

237

00:10:34,910 --> 00:10:32,190

medical procedure they are in favor of

238

00:10:36,830 --> 00:10:34,920

human sacrifice as they know some babies

239

00:10:38,810 --> 00:10:36,840

are injured and killed by vaccines but

240

00:10:41,810 --> 00:10:38,820

think this is okay for the perceived

241

00:10:43,580 --> 00:10:41,820

good of the community they are against

242

00:10:45,830 --> 00:10:43,590

people sharing whatever information they

243

00:10:49,250 --> 00:10:45,840

want and therefore they are in favor of

244

00:10:52,010 --> 00:10:49,260

censorship they believe bullying is

245

00:10:53,450 --> 00:10:52,020

acceptable when they do it venue owners

246

00:10:55,940 --> 00:10:53,460

were threatened harassed and intimidated

247

00:10:59,960 --> 00:10:55,950

to cancel the contracts we had in place

248

00:11:02,150 --> 00:10:59,970

this is bullying of course they deny all

249

00:11:04,130 --> 00:11:02,160

this but please look to their actions

250

00:11:06,610 --> 00:11:04,140

they speak louder than the words that

251

00:11:08,990 --> 00:11:06,620

they speak with their forked tongues

252

00:11:11,000 --> 00:11:09,000

what you doin say in this world is a

253

00:11:13,220 --> 00:11:11,010

declaration of who you really are and

254

00:11:15,890 --> 00:11:13,230

these people certainly made plenty of

255

00:11:18,440 --> 00:11:15,900

statements about themselves basically

256

00:11:21,260 --> 00:11:18,450

they are low vibrating souls who have

257

00:11:23,750 --> 00:11:21,270

behaved in rude arrogant violin tolerant

258

00:11:26,450 --> 00:11:23,760

controlling abusive manipulative and

259

00:11:29,420 --> 00:11:26,460

ignorant ways and so have declared this

260

00:11:31,280 --> 00:11:29,430

is who they really are they are so far

261

00:11:33,020 --> 00:11:31,290

away from the truth that they are trying

262

00:11:36,380 --> 00:11:33,030

to hold on to their ignorance and

263

00:11:38,870 --> 00:11:36,390

fearful position no matter what just

264

00:11:41,000 --> 00:11:38,880

know as higher vibrating souls who have

265

00:11:43,820 --> 00:11:41,010

learned the truth you can do much more

266

00:11:45,530 --> 00:11:43,830

to advance the truth for Otto learn by

267

00:11:49,880 --> 00:11:45,540

speaking out whenever you have an

268

00:11:51,440 --> 00:11:49,890

opportunity end quote that's about of it

269

00:11:53,660 --> 00:11:51,450

you can read the rest at your own

270

00:11:56,990 --> 00:11:53,670

leisure on the gang Kim and foundations

271

00:12:00,079 --> 00:11:57,000

Facebook page and for anyone wondering

272

00:12:01,910 --> 00:12:00,089

this lure vibrating saw received an

273

00:12:05,480 --> 00:12:01,920

automatic refund for the full purchase

274

00:12:07,640 --> 00:12:05,490

price of the ticket \$79 92 from

275

00:12:11,070 --> 00:12:07,650

Stephanie messenger via Eventbrite and

276

00:12:11,080 --> 00:12:15,020

Oh

277

00:12:20,100 --> 00:12:18,000

my name is Carrie papi hi I'm Steve

278

00:12:23,700 --> 00:12:20,110

Cogan this is Richard Saunders fight

279

00:12:25,560 --> 00:12:23,710

George Rob here I'm Jay novella I can

280

00:12:27,780 --> 00:12:25,570

tell you what I hate about QD would I

281

00:12:30,750 --> 00:12:27,790

really hate is that it comes to an end

282

00:12:33,360 --> 00:12:30,760

each year QED for me it's just a

283

00:12:36,480 --> 00:12:33,370

wonderful opportunity to hear lots of

284

00:12:38,280 --> 00:12:36,490

speakers hearing the crunch of 350

285

00:12:40,590 --> 00:12:38,290

people purposely and simultaneously

286

00:12:43,200 --> 00:12:40,600

overdosing on homeopathic pills for the

287

00:12:48,210 --> 00:12:43,210

10 23 event was a sound I will never

288

00:12:54,550 --> 00:12:51,610

it's simply one of the better skeptical

289

00:12:56,290 --> 00:12:54,560

conventions anywhere in the world and

290

00:13:00,250 --> 00:12:56,300

you're you're asking me what I think a

291

00:13:02,650 --> 00:13:00,260

QED I haven't been the QED and also

292

00:13:03,850 --> 00:13:02,660

because it's such a personable event to

293

00:13:05,860 --> 00:13:03,860

actually meet quite a few of these

294

00:13:08,829 --> 00:13:05,870

people for the first time because you

295

00:13:11,650 --> 00:13:08,839

will meet many many fun and interesting

296

00:13:14,769 --> 00:13:11,660

people you will see great talks by some

297

00:13:16,780 --> 00:13:14,779

of the best thinkers and you'll also

298

00:13:19,180 --> 00:13:16,790

meet people who have a drive and a

299

00:13:21,940 --> 00:13:19,190

passion for making the world better by

300

00:13:24,639 --> 00:13:21,950

protecting people and not being dicks

301  
00:13:26,139 --> 00:13:24,649  
about it you know right down to people

302  
00:13:29,259 --> 00:13:26,149  
who I maybe wouldn't have heard of

303  
00:13:31,389 --> 00:13:29,269  
without QED calm I would be an epic

304  
00:13:34,930 --> 00:13:31,399  
guest because I could speak in a

305  
00:13:37,120 --> 00:13:34,940  
flawless British accent hello everyone

306  
00:13:40,210 --> 00:13:37,130  
like that and everyone would be like who

307  
00:13:45,009 --> 00:13:40,220  
is this English guy I are you invading

308  
00:13:47,740 --> 00:13:45,019  
me he'd love to go QED 2015 April the 24

309  
00:13:49,990 --> 00:13:47,750  
to the 26th in Manchester England 12

310  
00:13:53,139 --> 00:13:50,000  
main stage speakers eight panels three

311  
00:13:56,500 --> 00:13:53,149  
comedians and 500 friends and the

312  
00:13:58,060 --> 00:13:56,510  
massive party tickets on 99 pounds or 69

313  
00:14:01,449 --> 00:13:58,070

pounds for students for the weekend

314

00:14:04,960 --> 00:14:01,459

including the Saturday night www QED

315

00:14:22,400 --> 00:14:04,970

coorg to get your ticket hurry it's in

316

00:14:26,910 --> 00:14:25,170

once again I found myself in Oakland i'm

317

00:14:29,160 --> 00:14:26,920

visiting the National Center for Science

318

00:14:30,900 --> 00:14:29,170

Education and as listeners know I've

319

00:14:34,380 --> 00:14:30,910

been visiting this wonderful place now

320

00:14:36,990 --> 00:14:34,390

for many years and I always come and see

321

00:14:39,210 --> 00:14:37,000

my old friend Eugenie Scott hello Jeanie

322

00:14:40,620 --> 00:14:39,220

hi there good to see you again good to

323

00:14:43,290 --> 00:14:40,630

see you again and it's good to hear your

324

00:14:45,600 --> 00:14:43,300

voice again but today I'm very pleased

325

00:14:49,079 --> 00:14:45,610

to be here to meet and read hello hello

326

00:14:51,269 --> 00:14:49,089

nice to meet you and you're the new kid

327

00:14:56,370 --> 00:14:51,279

on the block can I say that absolutely

328

00:14:58,170 --> 00:14:56,380

it's only the truth and I see you've

329

00:15:01,590 --> 00:14:58,180

settled into this office very well and

330

00:15:03,300 --> 00:15:01,600

you've got quite a big job in front of

331

00:15:06,300 --> 00:15:03,310

you I can imagine oh I can't imagine

332

00:15:08,519 --> 00:15:06,310

what it must be like Jeanne you've

333

00:15:10,560 --> 00:15:08,529

passed the baton so to speak well Anne

334

00:15:13,350 --> 00:15:10,570

is not really the new kid on the block

335

00:15:14,790 --> 00:15:13,360

she's been here for almost a year in

336

00:15:17,910 --> 00:15:14,800

fact i think the anniversary is coming

337

00:15:20,040 --> 00:15:17,920

up the the passing of said baton the

338

00:15:22,650 --> 00:15:20,050

baton was not dropped it was grabbed and

339

00:15:24,240 --> 00:15:22,660

run with down the black so no aunt has

340

00:15:26,100 --> 00:15:24,250

been doing a great job this last year

341

00:15:28,710 --> 00:15:26,110

it's really been it's really been fun to

342

00:15:30,690 --> 00:15:28,720

see the organization developing in new

343

00:15:33,000 --> 00:15:30,700

ways and new ideas popping up all the

344

00:15:34,110 --> 00:15:33,010

time it's been terrific I'm so pleased

345

00:15:35,970 --> 00:15:34,120

to hear that I'm so pleased to hear that

346

00:15:38,190 --> 00:15:35,980

because last time we spoke you were just

347

00:15:41,400 --> 00:15:38,200

sort of telling us all about your

348

00:15:42,829 --> 00:15:41,410

retirement coming up which it did and I

349

00:15:45,660 --> 00:15:42,839

guess you're handling that quite well

350

00:15:47,670 --> 00:15:45,670

I'm getting better at retirement I mean

351

00:15:49,400 --> 00:15:47,680

the thing that people don't understand

352

00:15:53,579 --> 00:15:49,410

at least I didn't understand is that

353

00:15:55,680 --> 00:15:53,589

retirement takes practice you have you

354

00:15:58,410 --> 00:15:55,690

have to figure out how to not do things

355

00:16:00,510 --> 00:15:58,420

and you know if at least somebody like

356

00:16:02,070 --> 00:16:00,520

me I mean I but I'm actually you'll be

357

00:16:04,530 --> 00:16:02,080

shocked you will be shocked to hear this

358

00:16:07,500 --> 00:16:04,540

my daughter was shocked I have been

359

00:16:09,480 --> 00:16:07,510

watching television I'm shocked I told

360

00:16:11,730 --> 00:16:09,490

you don't you like I say I'm getting

361

00:16:13,290 --> 00:16:11,740

better at retirement good for you

362

00:16:15,780 --> 00:16:13,300

Jeannie are you looking well till you're

363

00:16:18,090 --> 00:16:15,790

looking fabulous so let's get down to

364

00:16:20,220 --> 00:16:18,100

the business Otis began you're here

365

00:16:23,220 --> 00:16:20,230

you've been here from roughly a year I

366

00:16:24,840 --> 00:16:23,230

guess and um well I guess it's a pretty

367

00:16:26,640 --> 00:16:24,850

open question but how are you finding it

368

00:16:28,240 --> 00:16:26,650

I mean is it as challenging as you

369

00:16:30,100 --> 00:16:28,250

thought it would be

370

00:16:31,480 --> 00:16:30,110

it is challenging and obviously it's

371

00:16:34,000 --> 00:16:31,490

difficult to step into the shoes of

372

00:16:36,970 --> 00:16:34,010

someone like Jeanne and to step into an

373

00:16:39,550 --> 00:16:36,980

organization that has had such a strong

374

00:16:42,130 --> 00:16:39,560

identity over the years and try to

375

00:16:47,200 --> 00:16:42,140

figure out how can I what I keep saying

376

00:16:48,880 --> 00:16:47,210

is how do I not break it a good point is

377

00:16:50,650 --> 00:16:48,890

the old expression if it's if it works

378

00:16:52,300 --> 00:16:50,660

don't fix it right sorry that if it

379

00:16:54,900 --> 00:16:52,310

ain't broke don't fix it I think yeah

380

00:16:58,020 --> 00:16:54,910

exactly so really a very strong

381

00:17:02,050 --> 00:16:58,030

imperative not to not to screw things up

382

00:17:04,449 --> 00:17:02,060

but also to try to see how we can move

383

00:17:05,860 --> 00:17:04,459

forward knowing that what I heard during

384

00:17:07,630 --> 00:17:05,870

the interview process and what I heard

385

00:17:10,780 --> 00:17:07,640

it in my first months with the staff is

386

00:17:12,490 --> 00:17:10,790

that we know that we're only hearing the

387

00:17:15,699 --> 00:17:12,500

tip of the iceberg of what's going on

388

00:17:17,710 --> 00:17:15,709

and in US schools with respect to bad

389

00:17:19,750 --> 00:17:17,720

science being taught or sign settled

390

00:17:21,460 --> 00:17:19,760

science being taught as controversial so

391

00:17:25,240 --> 00:17:21,470

how do we get out ahead of that how do

392

00:17:27,010 --> 00:17:25,250

we how do we get out of the situation of

393

00:17:28,990 --> 00:17:27,020

just waiting for people to tell us the

394

00:17:32,920 --> 00:17:29,000

mad things are happening and find out

395

00:17:34,270 --> 00:17:32,930

about them make sure more people know

396

00:17:36,220 --> 00:17:34,280

about us make sure we find out about

397

00:17:38,230 --> 00:17:36,230

more things happening and ideally

398

00:17:40,330 --> 00:17:38,240

prevent them from happening in the first

399

00:17:42,610 --> 00:17:40,340

place so that's really been what I've

400

00:17:44,740 --> 00:17:42,620

been working with the staff on for the

401  
00:17:47,200 --> 00:17:44,750  
last year's how do we do that I think

402  
00:17:50,470 --> 00:17:47,210  
that's fantastic i'm and we can't drop a

403  
00:17:52,510 --> 00:17:50,480  
stitch in time saves nine and announce

404  
00:17:54,790 --> 00:17:52,520  
it what is it on scientific inventions

405  
00:17:56,260 --> 00:17:54,800  
worth a pound of cure you've really been

406  
00:17:59,560 --> 00:17:56,270  
you could really been reading your Ben

407  
00:18:01,440 --> 00:17:59,570  
Franklin what did you know that he wrote

408  
00:18:04,840 --> 00:18:01,450  
under the name of Richard Saunders

409  
00:18:07,750 --> 00:18:04,850  
that's right i forgot of that a poor

410  
00:18:10,630 --> 00:18:07,760  
richard's almanack i'd forgotten in

411  
00:18:14,460 --> 00:18:10,640  
everett we digress but than usual in

412  
00:18:16,780 --> 00:18:14,470  
this interview is I think that's

413  
00:18:19,389 --> 00:18:16,790

absolutely right and just before the

414

00:18:22,539 --> 00:18:19,399

interview we were just chatting about

415

00:18:24,849 --> 00:18:22,549

anti-vaccination which is a big issue of

416

00:18:27,759 --> 00:18:24,859

course in other spheres and that's the

417

00:18:30,549 --> 00:18:27,769

attitude there too I mean if we can in

418

00:18:32,320 --> 00:18:30,559

that fight if we can we stop the damage

419

00:18:34,899 --> 00:18:32,330

before it starts it saves us running

420

00:18:37,779 --> 00:18:34,909

around trying to fix it kids in that

421

00:18:39,399 --> 00:18:37,789

respect so that's that's I think that's

422

00:18:41,499 --> 00:18:39,409

absolutely the right attitude to have

423

00:18:44,289 --> 00:18:41,509

and how do you think you've been going

424

00:18:46,629 --> 00:18:44,299

over the last year of that attitude well

425

00:18:50,680 --> 00:18:46,639

it would be nice to say oh well we've we

426

00:18:51,729 --> 00:18:50,690

fixed it um we haven't but I just want

427

00:18:54,399 --> 00:18:51,739

to throw out some numbers because I

428

00:18:58,359 --> 00:18:54,409

think they're very striking so there was

429

00:19:00,729 --> 00:18:58,369

a study by burkman and plus her about

430

00:19:02,979 --> 00:19:00,739

five years ago now that looked at how

431

00:19:06,430 --> 00:19:02,989

many biology teachers were teaching

432

00:19:08,940 --> 00:19:06,440

either creationism or teaching straight

433

00:19:11,709 --> 00:19:08,950

up teaching creationism or teaching

434

00:19:13,930 --> 00:19:11,719

creationism as a valid alternative to

435

00:19:16,239 --> 00:19:13,940

evolutions or teaching both sides and

436

00:19:18,940 --> 00:19:16,249

the numbers were really shocking the

437

00:19:21,519 --> 00:19:18,950

very large number of biology teachers I

438

00:19:22,749 --> 00:19:21,529

forget that exact percentage yet the

439

00:19:24,639 --> 00:19:22,759

third kind of depending on how the

440

00:19:26,919 --> 00:19:24,649

question a quarter to a third it was a

441

00:19:29,049 --> 00:19:26,929

little bit shocking yeah Wow but even if

442

00:19:30,639 --> 00:19:29,059

you took that the really worst case

443

00:19:32,859 --> 00:19:30,649

scenario of their teaching creationism I

444

00:19:35,079 --> 00:19:32,869

believe was 16 yeah her son was lowered

445

00:19:37,180 --> 00:19:35,089

and if you but even if you just take

446

00:19:38,649 --> 00:19:37,190

that and you multiply it you say sixteen

447

00:19:41,889 --> 00:19:38,659

percent of American biology teachers

448

00:19:43,719 --> 00:19:41,899

which is 53,000 and how many millions of

449

00:19:46,029 --> 00:19:43,729

American high school students there are

450

00:19:47,769 --> 00:19:46,039

there are and you divide evenly which is

451  
00:19:49,779 --> 00:19:47,779  
not necessarily the case because some

452  
00:19:53,289 --> 00:19:49,789  
classes are bigger than others it works

453  
00:19:55,149 --> 00:19:53,299  
out to about 420,000 biology students a

454  
00:19:57,609 --> 00:19:55,159  
year in the United States learning

455  
00:20:01,509 --> 00:19:57,619  
creationism instead of evolution it's

456  
00:20:04,119 --> 00:20:01,519  
absolutely stunning number and we hear

457  
00:20:06,430 --> 00:20:04,129  
about maybe a hundred cases a year yeah

458  
00:20:09,419 --> 00:20:06,440  
so we're not clearly only dealing with

459  
00:20:13,570 --> 00:20:09,429  
the tip of the iceberg so how do we

460  
00:20:16,539 --> 00:20:13,580  
flush those teachers out how do we

461  
00:20:18,159 --> 00:20:16,549  
identify the community well we certainly

462  
00:20:21,039 --> 00:20:18,169  
know where some of these communities are

463  
00:20:26,109 --> 00:20:21,049

but how do we get at that how do we make

464

00:20:28,659 --> 00:20:26,119

it so unacceptable that we start shaming

465

00:20:32,180 --> 00:20:28,669

these communities into not allowing that

466

00:20:34,759 --> 00:20:32,190

to happen so we're going at it and

467

00:20:38,659 --> 00:20:34,769

three pronged effort reaching out to

468

00:20:40,430 --> 00:20:38,669

teachers directly knowing that most

469

00:20:41,930 --> 00:20:40,440

science teachers doing a great job yeah

470

00:20:44,210 --> 00:20:41,940

and they're doing a great job with very

471

00:20:47,210 --> 00:20:44,220

limited resources and with increasingly

472

00:20:48,889 --> 00:20:47,220

high demands on what they're expected to

473

00:20:51,049 --> 00:20:48,899

get across and how they're going to be

474

00:20:53,330 --> 00:20:51,059

assessed for it they need to be propped

475

00:20:55,879 --> 00:20:53,340

up they need to be told you guys are the

476  
00:20:58,610 --> 00:20:55,889  
best you are you are the foundation of

477  
00:21:00,610 --> 00:20:58,620  
fixing this problem in the u.s. of

478  
00:21:02,210 --> 00:21:00,620  
science illiteracy and and and

479  
00:21:05,119 --> 00:21:02,220  
vulnerability to that kind of

480  
00:21:06,919 --> 00:21:05,129  
anti-vaxxers and other yes anti science

481  
00:21:09,710 --> 00:21:06,929  
people it's amazing how it all ties in

482  
00:21:11,090 --> 00:21:09,720  
somehow yeah yeah because auntie vax

483  
00:21:12,259 --> 00:21:11,100  
doesn't it that doesn't show up in

484  
00:21:14,090 --> 00:21:12,269  
textbooks it's not something that

485  
00:21:15,769 --> 00:21:14,100  
teachers teach in schools but it's the

486  
00:21:17,389 --> 00:21:15,779  
same phenomenon it's a slipping of the

487  
00:21:19,399 --> 00:21:17,399  
standards it's it's once you let

488  
00:21:20,990 --> 00:21:19,409

something in the door like that it's

489

00:21:22,190 --> 00:21:21,000

easy for the rest of it to come in I

490

00:21:23,990 --> 00:21:22,200

guess well once you start saying

491

00:21:26,029 --> 00:21:24,000

scientists are just like any other group

492

00:21:28,720 --> 00:21:26,039

and they just say whatever is in their

493

00:21:31,430 --> 00:21:28,730

best interests and Sciences is not

494

00:21:34,070 --> 00:21:31,440

dissenters disinterested sciences not

495

00:21:36,379 --> 00:21:34,080

impartial then you really are on a

496

00:21:37,700 --> 00:21:36,389

slippery slope Oh scientists believe

497

00:21:39,860 --> 00:21:37,710

this but here's another point of view

498

00:21:42,710 --> 00:21:39,870

that's sort of thinking right well in

499

00:21:44,629 --> 00:21:42,720

that sort of equal time kind of thinking

500

00:21:48,100 --> 00:21:44,639

or something that we battled for a long

501  
00:21:50,029 --> 00:21:48,110  
time and but I think I think Anna's is

502  
00:21:53,779 --> 00:21:50,039  
talking about something that's a little

503  
00:21:55,909 --> 00:21:53,789  
bit a little bit deeper it's about what

504  
00:21:58,129 --> 00:21:55,919  
i would like to think in the most

505  
00:22:00,919 --> 00:21:58,139  
generous attitude and misunderstanding

506  
00:22:03,259 --> 00:22:00,929  
of the scientific process and how

507  
00:22:05,570 --> 00:22:03,269  
scientists go about doing their jobs but

508  
00:22:08,539 --> 00:22:05,580  
i'm becoming more and more convinced

509  
00:22:12,289 --> 00:22:08,549  
that they're there really we're on the

510  
00:22:14,539 --> 00:22:12,299  
cusp of a shift to an attitude in a

511  
00:22:18,169 --> 00:22:14,549  
substantial portion of the population in

512  
00:22:21,139 --> 00:22:18,179  
which just to use anne's phrase science

513  
00:22:24,499 --> 00:22:21,149

is you know just another way of knowing

514

00:22:27,320 --> 00:22:24,509

at me it's it's no better or any worse

515

00:22:30,649 --> 00:22:27,330

than any other kind of way of coming to

516

00:22:33,289 --> 00:22:30,659

a decision about something and you know

517

00:22:35,360 --> 00:22:33,299

for a lot of things that may be true i

518

00:22:36,950 --> 00:22:35,370

mean science isn't going to tell us

519

00:22:38,629 --> 00:22:36,960

whether the democrats the health plan or

520

00:22:41,149 --> 00:22:38,639

the republicans health plan is better

521

00:22:44,810 --> 00:22:41,159

but if you're talking about something

522

00:22:47,419 --> 00:22:44,820

like vaccinations or how better to teach

523

00:22:50,600 --> 00:22:47,429

change in schools or the reality of

524

00:22:52,159 --> 00:22:50,610

evolution yah to render unto science I

525

00:22:54,350 --> 00:22:52,169

mean science really does the best way of

526  
00:22:56,919 --> 00:22:54,360  
knowing produces and to the extent that

527  
00:22:59,779 --> 00:22:56,929  
there may be in American culture

528  
00:23:03,139 --> 00:22:59,789  
currents that are attacking that

529  
00:23:04,909 --> 00:23:03,149  
fundamental foundation of confidence in

530  
00:23:06,710 --> 00:23:04,919  
science notice I didn't say faith in

531  
00:23:09,019 --> 00:23:06,720  
science that's different but the

532  
00:23:11,930 --> 00:23:09,029  
confidence in science that I think has

533  
00:23:13,700 --> 00:23:11,940  
been traditional in America we've you

534  
00:23:16,669 --> 00:23:13,710  
know all of the surveys have shown for

535  
00:23:18,350 --> 00:23:16,679  
decades that Americans like science they

536  
00:23:19,850 --> 00:23:18,360  
appreciate what science does for them

537  
00:23:22,730 --> 00:23:19,860  
they like their science gadgets they

538  
00:23:24,049 --> 00:23:22,740

like grandma's new hip transplant and

539

00:23:27,350 --> 00:23:24,059

you know they like the midlife

540

00:23:30,680 --> 00:23:27,360

technology but when science impinges

541

00:23:32,720 --> 00:23:30,690

upon their ideological and emotional

542

00:23:34,669 --> 00:23:32,730

concerns I mean I want I don't want my

543

00:23:36,080 --> 00:23:34,679

baby to get sick when somebody comes up

544

00:23:37,730 --> 00:23:36,090

and tells me that vaccines are going to

545

00:23:39,519 --> 00:23:37,740

make my baby sick and those scientists

546

00:23:41,539 --> 00:23:39,529

are all in the payroll of the big

547

00:23:45,080 --> 00:23:41,549

pharmaceutical companies anyway old

548

00:23:47,810 --> 00:23:45,090

arguments yeah you know my my concern

549

00:23:50,029 --> 00:23:47,820

for my child's welfare is going to make

550

00:23:53,330 --> 00:23:50,039

me listen very seriously to that

551  
00:23:54,649 --> 00:23:53,340  
alternate point of view even though if

552  
00:23:56,180 --> 00:23:54,659  
you know somebody came up and said Oh

553  
00:23:58,369 --> 00:23:56,190  
what they're saying about photosynthesis

554  
00:24:00,529 --> 00:23:58,379  
is wrong because all of the signs all of

555  
00:24:02,119 --> 00:24:00,539  
the botanists are only in the pockets of

556  
00:24:03,980 --> 00:24:02,129  
big sigh whatever they would say about

557  
00:24:06,529 --> 00:24:03,990  
foot ascend no it wouldn't matter to me

558  
00:24:08,899 --> 00:24:06,539  
but my kids health is important yeah so

559  
00:24:10,759 --> 00:24:08,909  
I've got an emotional concomitant to

560  
00:24:12,320 --> 00:24:10,769  
that and it's the same way with climate

561  
00:24:15,440 --> 00:24:12,330  
change it's the same way with evolution

562  
00:24:18,379 --> 00:24:15,450  
too well that we get back to the matter

563  
00:24:20,060 --> 00:24:18,389

of creationism especially and I could

564

00:24:22,700 --> 00:24:20,070

imagine some parents would say well my

565

00:24:24,470 --> 00:24:22,710

kids or my religion is important to me

566

00:24:25,940 --> 00:24:24,480

and therefore it's important to my kids

567

00:24:28,340 --> 00:24:25,950

and this is what I want taught to them

568

00:24:30,019 --> 00:24:28,350

in in the schools it's the old battle

569

00:24:31,519 --> 00:24:30,029

isn't one of the reasons we know that

570

00:24:33,619 --> 00:24:31,529

there are so many hundreds of thousands

571

00:24:35,629 --> 00:24:33,629

of students learning about creationism

572

00:24:36,980 --> 00:24:35,639

is because teachers were surveyed

573

00:24:39,019 --> 00:24:36,990

biology teachers were surveyed about

574

00:24:40,399 --> 00:24:39,029

what they were teaching and we found as

575

00:24:42,320 --> 00:24:40,409

we were trying to figure out what to do

576

00:24:43,999 --> 00:24:42,330

about climate change denial in the

577

00:24:47,389 --> 00:24:44,009

classroom that we didn't have any good

578

00:24:50,330 --> 00:24:47,399

data on what was being taught and and

579

00:24:52,249 --> 00:24:50,340

how it was being taught so we are just

580

00:24:54,590 --> 00:24:52,259

now gathering the results of a survey

581

00:24:55,909 --> 00:24:54,600

that was done in the fall of 8000 middle

582

00:24:57,580 --> 00:24:55,919

school and high school science teachers

583

00:25:01,899 --> 00:24:57,590

about what they're teaching

584

00:25:03,940 --> 00:25:01,909

about climate change and we are hopeful

585

00:25:05,590 --> 00:25:03,950

that that will give us the kind of deep

586

00:25:07,480 --> 00:25:05,600

information that we need to know what

587

00:25:10,000 --> 00:25:07,490

what is what problem are we facing in

588

00:25:12,760 --> 00:25:10,010

classrooms where is it happening is it a

589

00:25:15,850 --> 00:25:12,770

problem of people being children being

590

00:25:18,399 --> 00:25:15,860

taught that climate science that climate

591

00:25:20,019 --> 00:25:18,409

change isn't happening or is it children

592

00:25:21,820 --> 00:25:20,029

are being taught that it's not settled

593

00:25:25,210 --> 00:25:21,830

science and that its controversial or

594

00:25:26,890 --> 00:25:25,220

are they being taught good solid science

595

00:25:28,240 --> 00:25:26,900

on the topic we just we just don't know

596

00:25:30,220 --> 00:25:28,250

but we hope the survey will give us

597

00:25:32,019 --> 00:25:30,230

those answers it's interesting because

598

00:25:34,539 --> 00:25:32,029

back home I get the impression a lot of

599

00:25:37,090 --> 00:25:34,549

the opposition why they'll catch it is

600

00:25:39,250 --> 00:25:37,100

that oh it's not settled oh and some

601  
00:25:40,960 --> 00:25:39,260  
scientists this is dis creationism all

602  
00:25:42,820 --> 00:25:40,970  
over again isn't it it's it's

603  
00:25:44,639 --> 00:25:42,830  
fascinating it's like it's almost like

604  
00:25:47,260 --> 00:25:44,649  
history repeating itself it's the same

605  
00:25:49,000 --> 00:25:47,270  
we call it the science denial playbook

606  
00:25:51,490 --> 00:25:49,010  
and you can practically follow along

607  
00:25:53,110 --> 00:25:51,500  
with each kind of objection that they're

608  
00:25:55,000 --> 00:25:53,120  
going to come up with whatever that kind

609  
00:25:57,820 --> 00:25:55,010  
of science it is and and that one is you

610  
00:25:59,620 --> 00:25:57,830  
can never have enough evidence yeah yeah

611  
00:26:01,930 --> 00:25:59,630  
to convince some absolute and the same

612  
00:26:03,549 --> 00:26:01,940  
with the vaccine right it's it's amazing

613  
00:26:07,080 --> 00:26:03,559

what do you call the science in our

614

00:26:09,700 --> 00:26:07,090

playbook oh that should be a real book

615

00:26:11,200 --> 00:26:09,710

that should be latex book for skeptics

616

00:26:13,269 --> 00:26:11,210

that's good I like that okay there's an

617

00:26:14,769 --> 00:26:13,279

idea for you listeners out there get to

618

00:26:17,260 --> 00:26:14,779

it I don't just backtrack a little bit

619

00:26:18,909 --> 00:26:17,270

because I only talked about 11 leg of

620

00:26:21,990 --> 00:26:18,919

this stool that three like it's going is

621

00:26:25,529 --> 00:26:22,000

building so that that being the teachers

622

00:26:27,789 --> 00:26:25,539

that they we would like them to know

623

00:26:29,560 --> 00:26:27,799

that we have their backs and that we

624

00:26:33,070 --> 00:26:29,570

understand the role that they play in

625

00:26:35,409 --> 00:26:33,080

the in the scientific enterprise and

626

00:26:37,570 --> 00:26:35,419

support them in that and at the same

627

00:26:38,680 --> 00:26:37,580

time make sure that they are doing the

628

00:26:40,299 --> 00:26:38,690

right thing make sure that they know

629

00:26:42,460 --> 00:26:40,309

that it's not appropriate to teach

630

00:26:45,159 --> 00:26:42,470

climate change as a debate over the

631

00:26:47,200 --> 00:26:45,169

science so that's one like the other leg

632

00:26:48,789 --> 00:26:47,210

is the scientists themselves and not

633

00:26:49,960 --> 00:26:48,799

just the evolutionary biologists and not

634

00:26:52,510 --> 00:26:49,970

just the climate scientists but the

635

00:26:54,549 --> 00:26:52,520

entire scientific community needs to

636

00:26:56,019 --> 00:26:54,559

recognize that when as we've just been

637

00:26:59,130 --> 00:26:56,029

saying when science is attacked in one

638

00:27:01,930 --> 00:26:59,140

sphere it affects faith and science

639

00:27:03,700 --> 00:27:01,940

confidence in science in general it

640

00:27:07,060 --> 00:27:03,710

hurts the brand to use sermon

641

00:27:09,370 --> 00:27:07,070

advertising term and so the the Society

642

00:27:10,780 --> 00:27:09,380

of you know the American Chemical

643

00:27:13,900 --> 00:27:10,790

Society which is a supporting

644

00:27:18,100 --> 00:27:13,910

organization of NCSE the physicists the

645

00:27:20,680 --> 00:27:18,110

molecular biologists the meteorologists

646

00:27:23,740 --> 00:27:20,690

the dentist everybody who uses science

647

00:27:25,810 --> 00:27:23,750

in their profession needs to recognize

648

00:27:27,760 --> 00:27:25,820

that this kind of anti-science talk

649

00:27:30,040 --> 00:27:27,770

hurts them even if they're not attacking

650

00:27:32,440 --> 00:27:30,050

their particular area of science and a

651  
00:27:35,500 --> 00:27:32,450  
lot of scientists really don't know how

652  
00:27:40,570 --> 00:27:35,510  
to help they don't even know how to talk

653  
00:27:43,060 --> 00:27:40,580  
to deniers big point good point now we

654  
00:27:45,640 --> 00:27:43,070  
discover this absolutely back home with

655  
00:27:48,130 --> 00:27:45,650  
with getting the message across and you

656  
00:27:49,630 --> 00:27:48,140  
can know you stuff I know a lot of good

657  
00:27:51,130 --> 00:27:49,640  
skeptics and good scientists who

658  
00:27:53,830 --> 00:27:51,140  
certainly know their stuff but it's that

659  
00:27:56,160 --> 00:27:53,840  
but communication is what it's called

660  
00:27:59,260 --> 00:27:56,170  
ethereal communication that a skill that

661  
00:28:01,450 --> 00:27:59,270  
technique which is practice as well I

662  
00:28:06,730 --> 00:28:01,460  
imagine it's practice but it's also a

663  
00:28:09,910 --> 00:28:06,740

set of its that's hard to say it's it's

664

00:28:12,160 --> 00:28:09,920

a skill there may be some people who are

665

00:28:13,390 --> 00:28:12,170

just inherently clearer communicators

666

00:28:16,180 --> 00:28:13,400

and others but it's something that

667

00:28:18,670 --> 00:28:16,190

everyone can learn and and there are

668

00:28:21,100 --> 00:28:18,680

certain phrasings that you need to think

669

00:28:22,630 --> 00:28:21,110

about which communicate the way you want

670

00:28:28,570 --> 00:28:22,640

the information to be transmitted

671

00:28:31,180 --> 00:28:28,580

without communicating a bunch of of may

672

00:28:35,620 --> 00:28:31,190

be uncorrelated ideas that actually lead

673

00:28:38,140 --> 00:28:35,630

a person into into misunderstanding so

674

00:28:40,480 --> 00:28:38,150

yeah I think there's a even more

675

00:28:42,390 --> 00:28:40,490

fundamental than the fact that a lot of

676

00:28:45,790 --> 00:28:42,400

scientists are not terrific

677

00:28:47,650 --> 00:28:45,800

communicators is that they erroneously

678

00:28:51,310 --> 00:28:47,660

think that what they need to communicate

679

00:28:54,610 --> 00:28:51,320

is science and that's not the case in

680

00:28:56,830 --> 00:28:54,620

these in these instances that the way to

681

00:28:59,200 --> 00:28:56,840

convince a creationist that evolution is

682

00:29:02,140 --> 00:28:59,210

real is not to sit that person down and

683

00:29:05,440 --> 00:29:02,150

hammer them with evolution you know it's

684

00:29:09,070 --> 00:29:05,450

it's to take that step back and say this

685

00:29:10,900 --> 00:29:09,080

is about your faith isn't it you feel

686

00:29:13,270 --> 00:29:10,910

that evolution threatens your faith yeah

687

00:29:15,610 --> 00:29:13,280

did you know that there are hundreds of

688

00:29:17,710 --> 00:29:15,620

thousands of Christians who don't see it

689

00:29:20,230 --> 00:29:17,720

as threatening their faith can you think

690

00:29:22,300 --> 00:29:20,240

about it as a as something outside of

691

00:29:24,280 --> 00:29:22,310

your religion kind of the way the

692

00:29:25,810 --> 00:29:24,290

analogy that I've used that that p

693

00:29:29,830 --> 00:29:25,820

makes people laugh but I think it is

694

00:29:31,690 --> 00:29:29,840

helpful is that it's like playing soccer

695

00:29:34,270 --> 00:29:31,700

you're not allowed to pick up the ball

696

00:29:37,840 --> 00:29:34,280

and in science you're not allowed to

697

00:29:39,520 --> 00:29:37,850

invoke God you can invoke God it at

698

00:29:41,290 --> 00:29:39,530

church you can invoke God in the way you

699

00:29:42,460 --> 00:29:41,300

understand the Bible that's all fine but

700

00:29:44,230 --> 00:29:42,470

if you're going to talk about science

701  
00:29:47,440 --> 00:29:44,240  
you can't do that it's not allowed and

702  
00:29:49,060 --> 00:29:47,450  
so when you learn about evolution you're

703  
00:29:52,960 --> 00:29:49,070  
going to learn about how scientists

704  
00:29:55,960 --> 00:29:52,970  
explain what's going on in biological

705  
00:29:59,320 --> 00:29:55,970  
diversity and without being able to

706  
00:30:02,680 --> 00:29:59,330  
invoke a supernatural influence hmm salt

707  
00:30:04,870 --> 00:30:02,690  
it is it's separate this is an old old

708  
00:30:07,180 --> 00:30:04,880  
argument that genie is a past master at

709  
00:30:09,100 --> 00:30:07,190  
making but it's it's real news to

710  
00:30:11,890 --> 00:30:09,110  
scientist you can sort of see this sort

711  
00:30:14,680 --> 00:30:11,900  
of light bulb go on in their heads it oh

712  
00:30:17,110 --> 00:30:14,690  
oh i get it and climate change is

713  
00:30:21,520 --> 00:30:17,120

similar it's not religion but but people

714

00:30:23,590 --> 00:30:21,530

who is almost yes I do is I try to get

715

00:30:26,530 --> 00:30:23,600

politics its economics it's there are a

716

00:30:28,060 --> 00:30:26,540

couple of issues that we touch upon in

717

00:30:30,190 --> 00:30:28,070

the Australian skeptics in the skeptics

718

00:30:33,100 --> 00:30:30,200

and podcasts from time to time which get

719

00:30:34,660 --> 00:30:33,110

a reaction like none other and climate

720

00:30:37,630 --> 00:30:34,670

change is one of them because people

721

00:30:40,720 --> 00:30:37,640

will write in absolutely livid that we

722

00:30:42,100 --> 00:30:40,730

dare to be on the side of what we

723

00:30:44,620 --> 00:30:42,110

consider to be the scientific consensus

724

00:30:47,050 --> 00:30:44,630

and I've had people bail me up in our

725

00:30:48,910 --> 00:30:47,060

pub meetings demand that we take on this

726

00:30:50,320 --> 00:30:48,920

issue and say well you know it's sort of

727

00:30:53,170 --> 00:30:50,330

an issue are interested in but that's

728

00:30:55,330 --> 00:30:53,180

not where out of heart lies and they get

729

00:30:57,670 --> 00:30:55,340

terribly offended you know but I think

730

00:31:00,640 --> 00:30:57,680

that's the same with it were there any

731

00:31:02,170 --> 00:31:00,650

passion any interest like that so when

732

00:31:04,450 --> 00:31:02,180

you ask about am I going to get out and

733

00:31:06,010 --> 00:31:04,460

about the one community that I have

734

00:31:07,570 --> 00:31:06,020

started to get out and about with and

735

00:31:09,670 --> 00:31:07,580

will do more is the scientific community

736

00:31:12,670 --> 00:31:09,680

which is really the world that I came

737

00:31:15,580 --> 00:31:12,680

from before coming here so talking to

738

00:31:19,090 --> 00:31:15,590

scientists about how they can be helpful

739

00:31:23,380 --> 00:31:19,100

in this issue and not counterproductive

740

00:31:25,750 --> 00:31:23,390

you know seems to reach fall on willing

741

00:31:27,340 --> 00:31:25,760

ears and then the third leg of the stool

742

00:31:30,340 --> 00:31:27,350

which are just getting started in fact I

743

00:31:32,560 --> 00:31:30,350

just listed the position and the

744

00:31:35,110 --> 00:31:32,570

chronicle of higher education is to do a

745

00:31:36,880 --> 00:31:35,120

pilot project to start cyan't community

746

00:31:38,800 --> 00:31:36,890

science booster clubs

747

00:31:40,900 --> 00:31:38,810

in local communities where parents and

748

00:31:43,720 --> 00:31:40,910

local businesses that care about an

749

00:31:45,850 --> 00:31:43,730

educated workforce skeptics humanists

750

00:31:47,170 --> 00:31:45,860

anybody who's interested in the science

751

00:31:50,200 --> 00:31:47,180

education their kids are getting could

752

00:31:53,380 --> 00:31:50,210

get involved in these clubs and support

753

00:31:56,350 --> 00:31:53,390

their local teachers and informal

754

00:31:59,350 --> 00:31:56,360

science educators so whether that means

755

00:32:00,400 --> 00:31:59,360

raising money to send their local

756

00:32:02,920 --> 00:32:00,410

teachers to the National Science

757

00:32:04,900 --> 00:32:02,930

Teachers Association meeting or have a

758

00:32:08,800 --> 00:32:04,910

community science fair where all of the

759

00:32:10,660 --> 00:32:08,810

schools can bring to a local auditorium

760

00:32:13,210 --> 00:32:10,670

what their classes are learning just

761

00:32:15,490 --> 00:32:13,220

some way to make sure that people have a

762

00:32:16,690 --> 00:32:15,500

have a connection to what their science

763

00:32:18,610 --> 00:32:16,700

teachers are doing and what their kids

764

00:32:20,980 --> 00:32:18,620

are learning in the hope again of

765

00:32:23,500 --> 00:32:20,990

flushing out the situations where it's

766

00:32:24,970 --> 00:32:23,510

not going well but more importantly

767

00:32:26,050 --> 00:32:24,980

supporting the places where it really is

768

00:32:29,950 --> 00:32:26,060

going all which is going to be the

769

00:32:31,300 --> 00:32:29,960

majority of places so I hope that that

770

00:32:33,910 --> 00:32:31,310

will really get me out to lots of

771

00:32:36,400 --> 00:32:33,920

communities that are interested in

772

00:32:38,710 --> 00:32:36,410

improving the science education in their

773

00:32:41,020 --> 00:32:38,720

towns it's interesting because I guess

774

00:32:42,490 --> 00:32:41,030

you're being on the front line so to

775

00:32:44,260 --> 00:32:42,500

speak and this is something that you're

776

00:32:46,060 --> 00:32:44,270

vitaly interested in when I think of

777

00:32:50,790 --> 00:32:46,070

the situation back in Australia this was

778

00:32:54,190 --> 00:32:50,800

a big issue for us well 25 years ago

779

00:32:56,290 --> 00:32:54,200

even up to 15 10 years ago was sort of

780

00:32:59,950 --> 00:32:56,300

still there but to be honest with you

781

00:33:02,140 --> 00:32:59,960

today it is we could go for a long time

782

00:33:04,390 --> 00:33:02,150

not even hear this issue I'm in

783

00:33:08,710 --> 00:33:04,400

Queensland even in Queensland you know

784

00:33:11,710 --> 00:33:08,720

what we call the deep north um and I'm

785

00:33:13,390 --> 00:33:11,720

wondering whether that's because if the

786

00:33:15,700 --> 00:33:13,400

cultural thing we're because we're

787

00:33:18,220 --> 00:33:15,710

winning I don't know what would you be

788

00:33:19,960 --> 00:33:18,230

your take Gennie well you know it's kind

789

00:33:21,940 --> 00:33:19,970

of hard for me to pontificate about

790

00:33:25,060 --> 00:33:21,950

Australia I'm not there you're much

791

00:33:29,230 --> 00:33:25,070

better informed than I am but it's a

792

00:33:33,640 --> 00:33:29,240

it's a country with a small population

793

00:33:36,010 --> 00:33:33,650

relative Joe devours and I think when

794

00:33:38,590 --> 00:33:36,020

you have smaller communities like that

795

00:33:41,080 --> 00:33:38,600

the presence of charismatic leaders is

796

00:33:44,920 --> 00:33:41,090

extremely important and you sent ken ham

797

00:33:48,780 --> 00:33:44,930

to us and seriously he was he was a

798

00:33:52,650 --> 00:33:48,790

major force in Australian creationism

799

00:33:55,260 --> 00:33:52,660

he was there and stimulating others to

800

00:33:57,570 --> 00:33:55,270

you know to become active as and of

801

00:34:01,470 --> 00:33:57,580

course he did stuff too but yeah and

802

00:34:04,140 --> 00:34:01,480

then he then he went east and came to

803

00:34:08,490 --> 00:34:04,150

the US and cut his teeth at the icr you

804

00:34:11,040 --> 00:34:08,500

will turn to him yeah thanks thanks well

805

00:34:13,050 --> 00:34:11,050

if we have a joke Biko we've sent Canham

806

00:34:16,909 --> 00:34:13,060

here but you sent us Meryl Dory who's

807

00:34:20,159 --> 00:34:16,919

the Australia's number one ant evac sir

808

00:34:22,409 --> 00:34:20,169

we do owe you an apology but actually

809

00:34:24,600 --> 00:34:22,419

it's even worse than that yes you sent

810

00:34:28,770 --> 00:34:24,610

us Ken Ham but that was payback because

811

00:34:30,510 --> 00:34:28,780

we sent you the gift and Morris from the

812

00:34:32,880 --> 00:34:30,520

insta generation research and they're

813

00:34:35,669 --> 00:34:32,890

the ones who's got everybody all excited

814

00:34:37,770 --> 00:34:35,679

about creationism in Australia and then

815

00:34:41,040 --> 00:34:37,780

the rest is history but you're right i

816

00:34:43,460 --> 00:34:41,050

get the feeling also from talking with

817

00:34:45,900 --> 00:34:43,470

other australian friends and my

818

00:34:47,580 --> 00:34:45,910

infrequent visits they wish they were

819

00:34:50,340 --> 00:34:47,590

more frequent visits to australia that

820

00:34:52,770 --> 00:34:50,350

the creationism issue isn't really the

821

00:34:54,419 --> 00:34:52,780

big deal not anything less what it used

822

00:34:57,030 --> 00:34:54,429

to be when the australian skeptic

823

00:34:58,680 --> 00:34:57,040

started in the very early 80s it was one

824

00:35:00,870 --> 00:34:58,690

of the biggest one of the bigger issues

825

00:35:03,570 --> 00:35:00,880

of the organization yeah it was one of

826

00:35:05,730 --> 00:35:03,580

the organizing conflicts I think the guy

827

00:35:07,140 --> 00:35:05,740

you guys stuck oh yeah yeah yeah but

828

00:35:08,700 --> 00:35:07,150

then there's plenty of other woo to keep

829

00:35:11,550 --> 00:35:08,710

track I mean one of the things that you

830

00:35:13,980 --> 00:35:11,560

guys do marvelously and I should really

831

00:35:17,130 --> 00:35:13,990

sit down with an someday and drag out

832

00:35:21,240 --> 00:35:17,140

those videotapes but is your your work

833

00:35:24,660 --> 00:35:21,250

with dowsers because that is such a

834

00:35:27,390 --> 00:35:24,670

wonderful example of it can be used as

835

00:35:29,340 --> 00:35:27,400

such a wonderful example of how science

836

00:35:31,350 --> 00:35:29,350

works yeah yeah because what the

837

00:35:34,620 --> 00:35:31,360

Australian skeptics did on more than one

838

00:35:37,860 --> 00:35:34,630

occasion is they worked with the

839

00:35:39,570 --> 00:35:37,870

committed dowsers in Australia to set up

840

00:35:41,610 --> 00:35:39,580

controlled experiments the dowsers

841

00:35:43,320 --> 00:35:41,620

agreed with the protocol oh of course we

842

00:35:45,930 --> 00:35:43,330

can find water under those circumstances

843

00:35:49,020 --> 00:35:45,940

and this you know they range from very

844

00:35:52,800 --> 00:35:49,030

elaborate two very simple protocols but

845

00:35:54,750 --> 00:35:52,810

in all of the tests that were done there

846

00:35:56,700 --> 00:35:54,760

was double blinding which of course is

847

00:36:00,450 --> 00:35:56,710

such an important principle because it's

848

00:36:01,370 --> 00:36:00,460

so easy to kill yourself we're human

849

00:36:03,140 --> 00:36:01,380

beings and we're going to

850

00:36:05,440 --> 00:36:03,150

we want to see but these were all

851  
00:36:08,420 --> 00:36:05,450  
double-blinded tests of whether these

852  
00:36:10,310 --> 00:36:08,430  
dowsers who were you know find water all

853  
00:36:12,650 --> 00:36:10,320  
the time could do so under controlled

854  
00:36:15,320 --> 00:36:12,660  
circumstances and of course the

855  
00:36:19,040 --> 00:36:15,330  
wonderful results is that in every

856  
00:36:21,440 --> 00:36:19,050  
single case the dowsers did only as well

857  
00:36:23,090 --> 00:36:21,450  
as expected by chance which we knew they

858  
00:36:26,690 --> 00:36:23,100  
would do but which it's lovely to

859  
00:36:29,780 --> 00:36:26,700  
demonstrate I have used and recommended

860  
00:36:31,640 --> 00:36:29,790  
the Australian dowsing protocol shall we

861  
00:36:33,470 --> 00:36:31,650  
say and and the lovely thing is that you

862  
00:36:34,880 --> 00:36:33,480  
can find videos of what went on and how

863  
00:36:36,860 --> 00:36:34,890

they set it all up and these are all I

864

00:36:38,690 --> 00:36:36,870

go to it made them available very nicely

865

00:36:39,980 --> 00:36:38,700

well just benefit out and quickly for

866

00:36:43,970 --> 00:36:39,990

the benefit of our listeners if you

867

00:36:46,130 --> 00:36:43,980

google james randi in australia which is

868

00:36:47,690 --> 00:36:46,140

the name of the documentary made in 1980

869

00:36:50,660 --> 00:36:47,700

which is a famous set of water divining

870

00:36:53,900 --> 00:36:50,670

tests or if you google the mighty mitter

871

00:36:55,460 --> 00:36:53,910

muster water divining test the meter

872

00:36:57,590 --> 00:36:55,470

meter meter is a little country town

873

00:36:59,480 --> 00:36:57,600

it's beautiful but every year they have

874

00:37:01,190 --> 00:36:59,490

a fair and we've gone there a couple of

875

00:37:02,990 --> 00:37:01,200

times to test the local water diviners

876

00:37:04,460 --> 00:37:03,000

and that's quite fun or if you google my

877

00:37:06,170 --> 00:37:04,470

name Richard Saunders and water divining

878

00:37:08,090 --> 00:37:06,180

you'll see some tests up like that but

879

00:37:09,560 --> 00:37:08,100

thank you GD yes and we're quite pleased

880

00:37:12,320 --> 00:37:09,570

with those because they are a great way

881

00:37:14,570 --> 00:37:12,330

to teach people basic science actually

882

00:37:16,310 --> 00:37:14,580

and the other thing that that I've

883

00:37:19,400 --> 00:37:16,320

recommended them I've recommended them

884

00:37:22,750 --> 00:37:19,410

to teachers as a way for teachers to

885

00:37:27,220 --> 00:37:22,760

teach things like can scientifically

886

00:37:30,470 --> 00:37:27,230

variables constant double blinding

887

00:37:34,060 --> 00:37:30,480

hypothesis formation and testing because

888

00:37:36,590 --> 00:37:34,070

you can you can you know have the kids

889

00:37:38,330 --> 00:37:36,600

think through themselves show them a

890

00:37:40,490 --> 00:37:38,340

little bit of a clip and then well why

891

00:37:42,470 --> 00:37:40,500

did they do it this way why did they why

892

00:37:44,510 --> 00:37:42,480

did they cover the bags of sand or the

893

00:37:46,340 --> 00:37:44,520

bags of water so that nobody could see

894

00:37:48,260 --> 00:37:46,350

them and why did they have bags of sand

895

00:37:51,140 --> 00:37:48,270

as well as bags of water and the

896

00:37:53,060 --> 00:37:51,150

students should look at well because if

897

00:37:54,680 --> 00:37:53,070

it's a heavy bag is going to press down

898

00:37:56,720 --> 00:37:54,690

on the grass and then that would might

899

00:37:58,940 --> 00:37:56,730

qu that's what I mean you can have the

900

00:38:02,870 --> 00:37:58,950

kids work through the ideas controls

901  
00:38:04,160 --> 00:38:02,880  
were set up and teachers teachers can

902  
00:38:06,140 --> 00:38:04,170  
really benefit from this sort of thing

903  
00:38:08,300 --> 00:38:06,150  
because teaching science as a way of

904  
00:38:10,700 --> 00:38:08,310  
knowing is usually done so didactically

905  
00:38:13,280 --> 00:38:10,710  
and so boringly that kids just sort of

906  
00:38:14,359 --> 00:38:13,290  
memorize the you know seventh grade

907  
00:38:17,250 --> 00:38:14,369  
science

908  
00:38:18,780 --> 00:38:17,260  
forget about him the next week when we

909  
00:38:20,430 --> 00:38:18,790  
do that at schools we do this water

910  
00:38:23,160 --> 00:38:20,440  
binding test in schools the kids love it

911  
00:38:24,900 --> 00:38:23,170  
they get to stand up with the rods and

912  
00:38:26,670 --> 00:38:24,910  
they walk along and see if they can find

913  
00:38:28,260 --> 00:38:26,680

the water then it's blinded and the kids

914

00:38:30,000 --> 00:38:28,270

are screaming from the audience go on

915

00:38:33,329 --> 00:38:30,010

find it and all this sort of thing so I

916

00:38:35,940 --> 00:38:33,339

I get a big kick out of doing what what

917

00:38:39,270 --> 00:38:35,950

and doesn't know is that Richard and and

918

00:38:42,690 --> 00:38:39,280

some of his partners will have a show

919

00:38:45,030 --> 00:38:42,700

that they do for public schools it's

920

00:38:46,829 --> 00:38:45,040

obviously an assertive yeah mystery

921

00:38:48,510 --> 00:38:46,839

mystery investigators right it's like

922

00:38:51,720 --> 00:38:48,520

middle school and high school years yeah

923

00:38:54,450 --> 00:38:51,730

and they have this great school assembly

924

00:38:56,880 --> 00:38:54,460

that they do it that's really fun oh you

925

00:38:59,670 --> 00:38:56,890

can come on my show anytime ginger well

926

00:39:01,680 --> 00:38:59,680

Jeannie nn thank you so much for letting

927

00:39:04,230 --> 00:39:01,690

me come by once again to the National

928

00:39:06,930 --> 00:39:04,240

Center for Science Education I've loved

929

00:39:09,089 --> 00:39:06,940

dropping by every time you continue to

930

00:39:10,710 --> 00:39:09,099

do so I certainly could he couldn't keep

931

00:39:13,140 --> 00:39:10,720

me away you could not keep me away and

932

00:39:16,380 --> 00:39:13,150

i'll leave the final word to you you've

933

00:39:17,940 --> 00:39:16,390

got a big job ahead of you there's no

934

00:39:19,950 --> 00:39:17,950

doubt about it this is not an easy thing

935

00:39:22,980 --> 00:39:19,960

to do it's not a high and easy not to

936

00:39:25,680 --> 00:39:22,990

crack is it it isn't easy but the vast

937

00:39:28,339 --> 00:39:25,690

majority of people support it and I have

938

00:39:30,900 --> 00:39:28,349

been so stunned during this year that

939

00:39:33,329 --> 00:39:30,910

anyone who asked me and not just

940

00:39:35,550 --> 00:39:33,339

scientists what do you do and I say well

941

00:39:37,620 --> 00:39:35,560

we try to keep bad stuff out of science

942

00:39:40,470 --> 00:39:37,630

classrooms then they say oh thank you

943

00:39:42,300 --> 00:39:40,480

thank you for doing that so that's very

944

00:39:45,120 --> 00:39:42,310

very heartening and I know that if we

945

00:39:46,620 --> 00:39:45,130

can just figure out a way to engage and

946

00:39:48,900 --> 00:39:46,630

to enlist more and more the people who

947

00:39:50,970 --> 00:39:48,910

already agree with us I think we'll be

948

00:39:53,400 --> 00:39:50,980

able to make a dent in that problem I

949

00:39:55,109 --> 00:39:53,410

think so and this is exactly what the

950

00:39:56,880 --> 00:39:55,119

National Center for Science Education to

951  
00:39:59,430 --> 00:39:56,890  
be doing for many years and if people

952  
00:40:02,690 --> 00:39:59,440  
want to find out more what's the URL

953  
00:40:17,550 --> 00:40:02,700  
they can visit NCSE

954  
00:40:19,859 --> 00:40:17,560  
NCSE calm thank you again hi this is

955  
00:40:22,200 --> 00:40:19,869  
column Ryan from Cork skeptics in the

956  
00:40:24,510 --> 00:40:22,210  
Republic of Ireland here our next event

957  
00:40:26,220 --> 00:40:24,520  
skeptics in the castle features Michael

958  
00:40:29,120 --> 00:40:26,230  
Marshall recounting his ongoing

959  
00:40:31,380 --> 00:40:29,130  
adventures in the world of pseudoscience

960  
00:40:34,560 --> 00:40:31,390  
Michael needs no introduction to

961  
00:40:36,570 --> 00:40:34,570  
skeptics he is the organizer of the QED

962  
00:40:38,490 --> 00:40:36,580  
conference in the UK as well as the vice

963  
00:40:40,410 --> 00:40:38,500

president of the Merseyside skeptics

964

00:40:42,599 --> 00:40:40,420

society and the project director of the

965

00:40:44,400 --> 00:40:42,609

good thinking society he regularly

966

00:40:47,640 --> 00:40:44,410

speaks with proponents of pseudoscience

967

00:40:49,500 --> 00:40:47,650

for the be reasonable podcast as well as

968

00:40:52,950 --> 00:40:49,510

co-hosting the skeptics with a cave

969

00:40:56,070 --> 00:40:52,960

podcast his talk begins at eight pm on

970

00:40:58,349 --> 00:40:56,080

Thursday the fifth of february the venue

971

00:41:01,140 --> 00:40:58,359

is Black Rock castle Observatory near

972

00:41:03,030 --> 00:41:01,150

Cork City it's free to attend and all

973

00:41:05,099 --> 00:41:03,040

are welcome we look forward to seeing

974

00:41:08,640 --> 00:41:05,109

you there the skeptic sign is brought to

975

00:41:12,150 --> 00:41:08,650

you by dr. Bob's trivia quiz visit dr.

976  
00:41:16,980 --> 00:41:12,160  
Bob's quiz wordpress.com and see if you

977  
00:41:19,589 --> 00:41:16,990  
can match wits with dr. Bob welcome to a

978  
00:41:23,010 --> 00:41:19,599  
week in science from arias bring you the

979  
00:41:25,410 --> 00:41:23,020  
science you need to know 2014 was a

980  
00:41:27,930 --> 00:41:25,420  
massive year in science but there's also

981  
00:41:35,420 --> 00:41:27,940  
some weird stuff this week we're looking

982  
00:41:40,770 --> 00:41:38,070  
kicking off at top five is the ancient

983  
00:41:42,930 --> 00:41:40,780  
crustacean whose sperm is six times the

984  
00:41:44,640 --> 00:41:42,940  
size of its body the tiny ostracod

985  
00:41:47,339 --> 00:41:44,650  
measures around one millimeter in length

986  
00:41:49,560 --> 00:41:47,349  
but as sperm is nearly a centimeter long

987  
00:41:52,140 --> 00:41:49,570  
the way it fits inside the miniature

988  
00:41:54,609 --> 00:41:52,150

crustacean is by coiling itself up like

989

00:41:59,859 --> 00:41:57,039

and what I like to call hygienic homies

990

00:42:01,410 --> 00:41:59,869

comes in at number four the fist bump is

991

00:42:03,670 --> 00:42:01,420

the most hygienic of greetings

992

00:42:05,920 --> 00:42:03,680

transferring up to ninety percent less

993

00:42:08,739 --> 00:42:05,930

bacteria between people than a handshake

994

00:42:11,019 --> 00:42:08,749

a high-five was also more hygienic than

995

00:42:12,849 --> 00:42:11,029

the traditional handshake so all this

996

00:42:17,349 --> 00:42:12,859

time Barack Obama wasn't only being

997

00:42:19,299 --> 00:42:17,359

super cool is also being hygienic ever

998

00:42:21,249 --> 00:42:19,309

wondered how much bacteria passes

999

00:42:23,529 --> 00:42:21,259

between people when they kiss well now

1000

00:42:25,690 --> 00:42:23,539

we know dutch researchers studied

1001

00:42:27,999 --> 00:42:25,700

kissing couples and found that a six

1002

00:42:30,099 --> 00:42:28,009

second kiss transfers around 80 million

1003

00:42:32,680 --> 00:42:30,109

bacteria from mouth to mouth and

1004

00:42:34,779 --> 00:42:32,690

unsurprisingly this transfer means

1005

00:42:37,120 --> 00:42:34,789

couples have a more similar profile of

1006

00:42:39,759 --> 00:42:37,130

oral bacteria than two randomly paired

1007

00:42:42,130 --> 00:42:39,769

people and kind of disturbingly they've

1008

00:42:44,019 --> 00:42:42,140

opened a display in an Amsterdam museum

1009

00:42:48,059 --> 00:42:44,029

where you can kiss your partner and find

1010

00:42:51,160 --> 00:42:48,069

out your own bacteria transfer profile

1011

00:42:54,069 --> 00:42:51,170

at number two is a study which found the

1012

00:42:56,170 --> 00:42:54,079

ideal cheese for pizza now we can't say

1013

00:42:58,569 --> 00:42:56,180

move over mozzarella because it still

1014

00:43:00,999 --> 00:42:58,579

took top gong but we found out way more

1015

00:43:03,910 --> 00:43:01,009

than we really needed to about how

1016

00:43:06,970 --> 00:43:03,920

cheese's melt bubble release water and

1017

00:43:09,009 --> 00:43:06,980

oil and brown under heat it did develop

1018

00:43:11,470 --> 00:43:09,019

new techniques for studying food and

1019

00:43:13,539 --> 00:43:11,480

cheese characteristics and also gave us

1020

00:43:18,249 --> 00:43:13,549

information on how to customize our own

1021

00:43:21,069 --> 00:43:18,259

cheese blend for pizza and the number

1022

00:43:23,019 --> 00:43:21,079

one weird science story for 2014 is the

1023

00:43:25,420 --> 00:43:23,029

revelation we might be hitting peak

1024

00:43:27,339 --> 00:43:25,430

beard this stems from a study that found

1025

00:43:29,920 --> 00:43:27,349

that the most attractive facial hair a

1026

00:43:31,930 --> 00:43:29,930

man can have is heavy stubble but this

1027

00:43:34,539 --> 00:43:31,940

raises the question do these preferences

1028

00:43:36,609 --> 00:43:34,549

change researchers found that as a

1029

00:43:38,859 --> 00:43:36,619

particular facial hair style gets more

1030

00:43:42,099 --> 00:43:38,869

popular in the population it becomes

1031

00:43:46,089 --> 00:43:42,109

less attractive overall so rare is best

1032

00:43:49,150 --> 00:43:46,099

if you want to be most attractive that's

1033

00:43:51,400 --> 00:43:49,160

our top 5 weird science stories for 2014

1034

00:43:55,900 --> 00:43:51,410

there's more information on the RLS

1035

00:43:58,269 --> 00:43:55,910

websites are I aus org to a you follow

1036

00:44:00,579 --> 00:43:58,279

us on twitter at arias and like us on

1037

00:44:10,280 --> 00:44:00,589

facebook i'm ben lewis and we'll catch

1038

00:44:15,599 --> 00:44:13,470

ad hominem begging the question factoid

1039

00:44:17,730 --> 00:44:15,609

propagation false analogy false cause

1040

00:44:19,559 --> 00:44:17,740

false dichotomy gibberish immunized

1041

00:44:21,120 --> 00:44:19,569

hypothesis moral equivalence poison the

1042

00:44:23,730 --> 00:44:21,130

well simple modern certitude stacking a

1043

00:44:25,650 --> 00:44:23,740

deck and WTF are just some of the

1044

00:44:28,140 --> 00:44:25,660

fallacies we provide real life examples

1045

00:44:32,040 --> 00:44:28,150

of in hunting humbug 101 a podcast about

1046

00:44:45,990 --> 00:44:32,050

bad arguments check it out at WWF text

1047

00:44:51,100 --> 00:44:46,000

field guide net here's main art spooky

1048

00:44:55,010 --> 00:44:52,970

well it's time to get really paranoid

1049

00:44:56,210 --> 00:44:55,020

now it's paranoid corner would Maynard

1050

00:44:58,130 --> 00:44:56,220

here we have a doctor who is a

1051  
00:45:00,320 --> 00:44:58,140  
specialist in actually what is your name

1052  
00:45:02,750 --> 00:45:00,330  
why did you get your degree and what are

1053  
00:45:05,540 --> 00:45:02,760  
you a specialist in so my name is Grant

1054  
00:45:07,460 --> 00:45:05,550  
Hill Cawthon I did my original degree in

1055  
00:45:09,500 --> 00:45:07,470  
medicine because I wanted to become a

1056  
00:45:11,930 --> 00:45:09,510  
doctor I then became another type of

1057  
00:45:13,190 --> 00:45:11,940  
doctor so I did my PhD and I specialized

1058  
00:45:15,530 --> 00:45:13,200  
in infectious disease that's a

1059  
00:45:17,690 --> 00:45:15,540  
microbiology so I ask why why were you

1060  
00:45:19,670 --> 00:45:17,700  
drawn to that as a field it was

1061  
00:45:22,130 --> 00:45:19,680  
originally I was very interested in

1062  
00:45:24,200 --> 00:45:22,140  
neurology so I was interesting brains in

1063  
00:45:25,880 --> 00:45:24,210

general and how they work and then I had

1064

00:45:27,770 --> 00:45:25,890

a few cases when I was a junior doctor

1065

00:45:29,900 --> 00:45:27,780

where it was quite clear that people

1066

00:45:32,300 --> 00:45:29,910

with viral infections of the brains or

1067

00:45:33,640 --> 00:45:32,310

fell through the gaps infectious disease

1068

00:45:35,750 --> 00:45:33,650

people didn't know what to do with them

1069

00:45:37,940 --> 00:45:35,760

neurologists didn't sigh one I then

1070

00:45:40,130 --> 00:45:37,950

specialize in infectious diseases to try

1071

00:45:41,540 --> 00:45:40,140

and fill some of that gap in okay and

1072

00:45:43,040 --> 00:45:41,550

you're going to be talking about a

1073

00:45:44,840 --> 00:45:43,050

boldly here today because that's getting

1074

00:45:46,370 --> 00:45:44,850

all the headlines and everything is is

1075

00:45:48,260 --> 00:45:46,380

that really anything we should even be

1076  
00:45:50,570 --> 00:45:48,270  
vaguely worried about in this country at

1077  
00:45:52,520 --> 00:45:50,580  
this time in this country there really

1078  
00:45:54,080 --> 00:45:52,530  
isn't much point being worried it you

1079  
00:45:56,720 --> 00:45:54,090  
might we might get an occasional

1080  
00:45:58,550 --> 00:45:56,730  
imported case here but really because we

1081  
00:46:00,710 --> 00:45:58,560  
have a first-rate health care system we

1082  
00:46:02,510 --> 00:46:00,720  
have good infection control and people

1083  
00:46:04,820 --> 00:46:02,520  
would be identified quickly you wouldn't

1084  
00:46:06,260 --> 00:46:04,830  
see any kind of forward transmission so

1085  
00:46:08,450 --> 00:46:06,270  
you won't see additional cases within

1086  
00:46:09,800 --> 00:46:08,460  
Australia although that didn't happen in

1087  
00:46:11,510 --> 00:46:09,810  
Texas there was someone to another

1088  
00:46:13,160 --> 00:46:11,520

hospital in Texas and I didn't recognize

1089

00:46:15,230 --> 00:46:13,170

they had them based on their symptoms

1090

00:46:17,660 --> 00:46:15,240

what happened there so there they had a

1091

00:46:19,280 --> 00:46:17,670

very different set up in the US so they

1092

00:46:21,500 --> 00:46:19,290

the person that presented to the

1093

00:46:23,510 --> 00:46:21,510

hospital mr. Duncan went to his local

1094

00:46:25,490 --> 00:46:23,520

hospital and then was treated at his

1095

00:46:27,230 --> 00:46:25,500

local hospital the problem with doing

1096

00:46:28,880 --> 00:46:27,240

that is your healthcare staff for every

1097

00:46:30,980 --> 00:46:28,890

hospital in your country isn't going to

1098

00:46:32,330 --> 00:46:30,990

be trained to the same degree to use

1099

00:46:35,240 --> 00:46:32,340

different types of personal protective

1100

00:46:37,010 --> 00:46:35,250

equipment so in particular the nurses

1101

00:46:38,690 --> 00:46:37,020

that were involved in his hemodialysis

1102

00:46:40,700 --> 00:46:38,700

hadn't had any training so they had seen

1103

00:46:42,230 --> 00:46:40,710

a half an hour video on what they're

1104

00:46:44,570 --> 00:46:42,240

supposed to do and therefore weren't

1105

00:46:46,730 --> 00:46:44,580

prepared okay and we're better than that

1106

00:46:48,349 --> 00:46:46,740

generally in this country so in this

1107

00:46:50,870 --> 00:46:48,359

country we took a different approach we

1108

00:46:52,820 --> 00:46:50,880

decided to designate special quality in

1109

00:46:54,620 --> 00:46:52,830

hospitals in each state so if you

1110

00:46:56,450 --> 00:46:54,630

present to the wrong North Shore

1111

00:46:58,130 --> 00:46:56,460

Hospital and they think you might have a

1112

00:46:59,540 --> 00:46:58,140

bowler they'll isolate you and

1113

00:47:02,180 --> 00:46:59,550

immediately send you to Westmead

1114

00:47:05,780 --> 00:47:02,190

Hospital in Sydney for identify

1115

00:47:07,970 --> 00:47:05,790

treatment etc because in westmead we've

1116

00:47:09,830 --> 00:47:07,980

spent lots of time setting up two rooms

1117

00:47:11,630 --> 00:47:09,840

to contain these patients we've trained

1118

00:47:14,060 --> 00:47:11,640

all the staff are practiced and

1119

00:47:17,390 --> 00:47:14,070

practiced and so there's not the same

1120

00:47:18,800 --> 00:47:17,400

risk that you saw in the u.s. look I

1121

00:47:20,990 --> 00:47:18,810

would imagine the most dangerous thing

1122

00:47:22,520 --> 00:47:21,000

would be an airborne avian flu would

1123

00:47:25,280 --> 00:47:22,530

that be one the most dangerous things we

1124

00:47:27,140 --> 00:47:25,290

we could face as it as a human race some

1125

00:47:28,790 --> 00:47:27,150

some kind of flu so it doesn't

1126

00:47:31,520 --> 00:47:28,800

necessarily have to be avian flu but

1127

00:47:33,410 --> 00:47:31,530

certainly flu we know undergoes these

1128

00:47:36,200 --> 00:47:33,420

huge genetic changes to what we call

1129

00:47:37,820 --> 00:47:36,210

genetic shifts where you suddenly have a

1130

00:47:39,440 --> 00:47:37,830

version of flu that none of us have ever

1131

00:47:41,330 --> 00:47:39,450

seen so our immune systems don't know

1132

00:47:44,030 --> 00:47:41,340

how to respond to that and if it is

1133

00:47:46,850 --> 00:47:44,040

capable of being highly transmitted like

1134

00:47:48,560 --> 00:47:46,860

the 1918 Spanish flu for example then

1135

00:47:51,410 --> 00:47:48,570

that can have a dramatic effect on

1136

00:47:54,350 --> 00:47:51,420

humans so 1918 flu killed more people

1137

00:47:56,270 --> 00:47:54,360

than the First World War but isn't as

1138

00:47:58,700 --> 00:47:56,280

recognized by people and isn't as well

1139

00:48:00,950 --> 00:47:58,710

known so flu and viruses like that are

1140

00:48:04,010 --> 00:48:00,960

the ones to be worried about and what

1141

00:48:05,750 --> 00:48:04,020

makes a baller so infectious in layman's

1142

00:48:07,400 --> 00:48:05,760

terms I was talking about how it's

1143

00:48:10,010 --> 00:48:07,410

similar to hepatitis in transmission but

1144

00:48:12,110 --> 00:48:10,020

it's much more infective why is it so

1145

00:48:13,460 --> 00:48:12,120

what you tend to seem people who have a

1146

00:48:15,290 --> 00:48:13,470

bowler particularly when they're at the

1147

00:48:16,940 --> 00:48:15,300

stage where they're vomiting diarrhea or

1148

00:48:20,180 --> 00:48:16,950

even have the kind of bleeding symptoms

1149

00:48:22,250 --> 00:48:20,190

is I have very high viral loads so in

1150

00:48:24,650 --> 00:48:22,260

each milliliter of blood there's huge

1151

00:48:27,110 --> 00:48:24,660

amounts of virus and that virus if you

1152

00:48:28,940 --> 00:48:27,120

then transmit get some of that blood in

1153

00:48:32,840 --> 00:48:28,950

your eye or in your mouth or your nose

1154

00:48:35,330 --> 00:48:32,850

or four metal diarrhea or after they've

1155

00:48:38,180 --> 00:48:35,340

died and there's virus on the body then

1156

00:48:40,460 --> 00:48:38,190

it doesn't take much blood to actually

1157

00:48:43,520 --> 00:48:40,470

get infected by that virus the other key

1158

00:48:46,040 --> 00:48:43,530

thing with Ebola versus a HIV is it

1159

00:48:48,080 --> 00:48:46,050

takes very few virus particles to

1160

00:48:50,060 --> 00:48:48,090

actually set up an infection was in HIV

1161

00:48:52,430 --> 00:48:50,070

you need far more of the virus to

1162

00:48:54,920 --> 00:48:52,440

actually set it up in your body and they

1163

00:48:56,960 --> 00:48:54,930

got a cleared cause as to how this virus

1164

00:48:58,940 --> 00:48:56,970

came about as a due to the eating of

1165

00:49:01,520 --> 00:48:58,950

bush meat or some sort of transmutation

1166

00:49:04,100 --> 00:49:01,530

that way we know that Ebola lives within

1167

00:49:06,140 --> 00:49:04,110

bat populations in Africa and certainly

1168

00:49:07,910 --> 00:49:06,150

it looks like the bats have migrated

1169

00:49:11,000 --> 00:49:07,920

from Central Africa where they were

1170

00:49:13,010 --> 00:49:11,010

before over to West Africa so all of the

1171

00:49:14,599 --> 00:49:13,020

genetic information and the epidemiology

1172

00:49:17,420 --> 00:49:14,609

that's been done in Guinea where this

1173

00:49:20,539 --> 00:49:17,430

started points to a small town called

1174

00:49:23,479 --> 00:49:20,549

Millie and Il where the parents were

1175

00:49:25,910 --> 00:49:23,489

preparing raw bat and their two-year-old

1176

00:49:28,160 --> 00:49:25,920

child inadvertently got infected with

1177

00:49:30,049 --> 00:49:28,170

Ebola and so that was patient zero if

1178

00:49:31,819 --> 00:49:30,059

you like and it's from there from

1179

00:49:33,319 --> 00:49:31,829

looking after that child the impact on

1180

00:49:35,509 --> 00:49:33,329

the family and then other people being

1181

00:49:37,339 --> 00:49:35,519

infected that this has then spread and

1182

00:49:39,140 --> 00:49:37,349

we've seen that with every Ebola

1183

00:49:41,120 --> 00:49:39,150

outbreak is it seems to have spilled

1184

00:49:43,549 --> 00:49:41,130

over from what we call the sylvatic

1185

00:49:46,849 --> 00:49:43,559

cycle so animals out there in nature and

1186

00:49:49,279 --> 00:49:46,859

this happens as we move into animals

1187

00:49:51,019 --> 00:49:49,289

territories so in guinea they realized

1188

00:49:52,609 --> 00:49:51,029

after the war finished and they had a

1189

00:49:54,140 --> 00:49:52,619

stable government they could now chop

1190

00:49:56,660 --> 00:49:54,150

down the trees and they have a good

1191

00:49:58,279 --> 00:49:56,670

source of income mining moved in cleared

1192

00:50:00,049 --> 00:49:58,289

lots of areas so you're suddenly getting

1193

00:50:02,479 --> 00:50:00,059

animals constrained in one small area

1194

00:50:04,489 --> 00:50:02,489

you getting people becoming more reliant

1195

00:50:06,890 --> 00:50:04,499

on that kind of meat and so you set up

1196

00:50:08,989 --> 00:50:06,900

these systems for getting what we call

1197

00:50:11,210 --> 00:50:08,999

zoonotic infections so infections from

1198

00:50:13,339 --> 00:50:11,220

animals to humans could ask you the

1199

00:50:15,650 --> 00:50:13,349

historical question as an infectious

1200

00:50:17,450 --> 00:50:15,660

diseases doctor I've heard that the

1201  
00:50:19,130 --> 00:50:17,460  
bubonic plague doesn't always match up

1202  
00:50:20,630 --> 00:50:19,140  
with some of the symptoms what the black

1203  
00:50:23,120 --> 00:50:20,640  
death was do you have any do you have

1204  
00:50:25,220 --> 00:50:23,130  
you heard about that at all yeah so what

1205  
00:50:28,160 --> 00:50:25,230  
we call plague yesenia's pestis which is

1206  
00:50:30,109 --> 00:50:28,170  
a bacteria has actually crossed over

1207  
00:50:31,940 --> 00:50:30,119  
into humans multiple times so there's

1208  
00:50:34,099 --> 00:50:31,950  
been some very recent genetic studies

1209  
00:50:35,930 --> 00:50:34,109  
that Sean the very first Justinian's

1210  
00:50:38,299 --> 00:50:35,940  
plague for example that affected and

1211  
00:50:40,670 --> 00:50:38,309  
helped bring about the end of the Roman

1212  
00:50:43,819 --> 00:50:40,680  
Empire was a former plague but that came

1213  
00:50:45,620 --> 00:50:43,829

from animals but very sip separately to

1214

00:50:47,960 --> 00:50:45,630

the Black Death which moved over into

1215

00:50:49,789 --> 00:50:47,970

humans which is separate to the current

1216

00:50:51,499 --> 00:50:49,799

episodes of plague that you see in

1217

00:50:53,359 --> 00:50:51,509

Madagascar at the moment for example

1218

00:50:55,759 --> 00:50:53,369

where there's a big outbreak so they're

1219

00:50:57,349 --> 00:50:55,769

all cross-species transmissions it's not

1220

00:50:59,210 --> 00:50:57,359

near that the plague sits around for

1221

00:51:01,130 --> 00:50:59,220

ages and so there's slightly different

1222

00:51:03,410 --> 00:51:01,140

forms yes so they're slightly different

1223

00:51:05,809 --> 00:51:03,420

forms each time and so they have

1224

00:51:08,269 --> 00:51:05,819

different propensity to spread human to

1225

00:51:09,920 --> 00:51:08,279

human and so we see now the plague isn't

1226

00:51:11,690 --> 00:51:09,930

as bad as say the black death or

1227

00:51:14,630 --> 00:51:11,700

Justinian's plague it's less virulent

1228

00:51:16,130 --> 00:51:14,640

nowadays and as an infectious diseases

1229

00:51:17,930 --> 00:51:16,140

doctor you bit nervous when you go to a

1230

00:51:20,630 --> 00:51:17,940

salad bar in a public area and that sort

1231

00:51:22,700 --> 00:51:20,640

of thing no most of the time that's all

1232

00:51:23,749 --> 00:51:22,710

well controlled you don't wash your

1233

00:51:27,720 --> 00:51:23,759

hands a bit more than the average person

1234

00:51:29,310 --> 00:51:27,730

no I'm then part of the working in

1235

00:51:30,780 --> 00:51:29,320

just diseases you know what the risks

1236

00:51:32,880 --> 00:51:30,790

are you know that you have a good immune

1237

00:51:35,220 --> 00:51:32,890

system to fight these things if you eat

1238

00:51:37,349 --> 00:51:35,230

healthily you keep your immune system

1239

00:51:39,150 --> 00:51:37,359

fine to get enough sleep then you can

1240

00:51:40,920 --> 00:51:39,160

deal with those kind of infections as

1241

00:51:42,540 --> 00:51:40,930

they come along a [h\_\_h] being to skip

1242

00:51:44,190 --> 00:51:42,550

big conference of it there's one phrase

1243

00:51:47,010 --> 00:51:44,200

you really hate that people say you can

1244

00:51:48,420 --> 00:51:47,020

strengthen your immune system yes and we

1245

00:51:49,980 --> 00:51:48,430

never quite know what that actually

1246

00:51:51,990 --> 00:51:49,990

means and actually it's interesting when

1247

00:51:54,540 --> 00:51:52,000

you think about things I pandemic flu or

1248

00:51:57,090 --> 00:51:54,550

Ebola that actually affects people with

1249

00:51:58,890 --> 00:51:57,100

strong immune systems were more than

1250

00:52:01,170 --> 00:51:58,900

people with weak immune systems because

1251  
00:52:02,970 --> 00:52:01,180  
it's really act against themselves yeah

1252  
00:52:04,859 --> 00:52:02,980  
it's there all of the symptoms are

1253  
00:52:06,330 --> 00:52:04,869  
because your immune system is reacting

1254  
00:52:09,330 --> 00:52:06,340  
to the virus it's not the virus itself

1255  
00:52:11,550 --> 00:52:09,340  
so actually in pandemic flu for example

1256  
00:52:13,770 --> 00:52:11,560  
or the deaths normally occur within the

1257  
00:52:15,480 --> 00:52:13,780  
18 to 40 age range where people have the

1258  
00:52:16,950 --> 00:52:15,490  
strongest immune system so yes

1259  
00:52:19,740 --> 00:52:16,960  
strengthening immune system doesn't

1260  
00:52:21,210 --> 00:52:19,750  
really mean that much yeah and taking

1261  
00:52:23,130 --> 00:52:21,220  
vitamin C doesn't mean that much is

1262  
00:52:24,750 --> 00:52:23,140  
nothing you can actually do to help is

1263  
00:52:27,060 --> 00:52:24,760

there really no it's getting a good

1264

00:52:29,520 --> 00:52:27,070

balanced diet we know that vitamins in a

1265

00:52:30,810 --> 00:52:29,530

tablet form just don't really work in

1266

00:52:32,310 --> 00:52:30,820

the same way that they do if you get

1267

00:52:34,109 --> 00:52:32,320

them in fruit and veg and in a good

1268

00:52:35,880 --> 00:52:34,119

balanced diet so that's actually the

1269

00:52:37,080 --> 00:52:35,890

most important thing okay there's a

1270

00:52:38,760 --> 00:52:37,090

really frustrate you would some of the

1271

00:52:40,590 --> 00:52:38,770

popular media reports of the whole a

1272

00:52:42,180 --> 00:52:40,600

bowler thing or or anything really

1273

00:52:43,680 --> 00:52:42,190

because they they just tend to get the

1274

00:52:45,750 --> 00:52:43,690

wrong end of the stick and then beat

1275

00:52:47,550 --> 00:52:45,760

around the bush with it yeah and it is

1276

00:52:49,680 --> 00:52:47,560

always a big risk and actually with the

1277

00:52:51,270 --> 00:52:49,690

current Ebola outbreak the questions

1278

00:52:52,800 --> 00:52:51,280

have always been about what does it mean

1279

00:52:54,270 --> 00:52:52,810

for Australia what does it mean for the

1280

00:52:57,270 --> 00:52:54,280

United States there's very little

1281

00:52:59,400 --> 00:52:57,280

concentration on the 15,000 cases that

1282

00:53:01,500 --> 00:52:59,410

have occurred in West Africa the 5,000

1283

00:53:04,109 --> 00:53:01,510

deaths so that's where our attention

1284

00:53:05,400 --> 00:53:04,119

should be not what's the impact on us of

1285

00:53:07,080 --> 00:53:05,410

course I imagine you wouldn't be a big

1286

00:53:09,390 --> 00:53:07,090

supporter of her sending some homeopathy

1287

00:53:10,800 --> 00:53:09,400

over there really no and that's one of

1288

00:53:12,660 --> 00:53:10,810

the things we've we've actually seen

1289

00:53:15,300 --> 00:53:12,670

homeopathic practitioners go out there

1290

00:53:16,950 --> 00:53:15,310

and these countries have wised up to

1291

00:53:18,960 --> 00:53:16,960

this and are trying to stop visas

1292

00:53:20,520 --> 00:53:18,970

they're trying to bring about bands we

1293

00:53:22,560 --> 00:53:20,530

see the same thing with silver

1294

00:53:25,140 --> 00:53:22,570

preparations lots of going around about

1295

00:53:27,060 --> 00:53:25,150

that and the FDA has had to consistently

1296

00:53:28,890 --> 00:53:27,070

send out cease and desist letters to

1297

00:53:31,410 --> 00:53:28,900

these companies to try and stop this

1298

00:53:32,910 --> 00:53:31,420

misinformation from going about look get

1299

00:53:34,740 --> 00:53:32,920

out there on stage and spread the

1300

00:53:36,390 --> 00:53:34,750

critical thinking today yeah that's the

1301  
00:53:38,340 --> 00:53:36,400  
idea we're trying to dispel myths and

1302  
00:53:40,109 --> 00:53:38,350  
try and get the focus back on West

1303  
00:53:40,640 --> 00:53:40,119  
Africa and get an A to them rather than

1304  
00:53:42,680 --> 00:53:40,650  
why we know

1305  
00:53:45,440 --> 00:53:42,690  
about all of this these myths and

1306  
00:53:48,019 --> 00:53:45,450  
legends that surround Ebola I guess the

1307  
00:53:49,640 --> 00:53:48,029  
term is evidence-based yeah we won both

1308  
00:53:51,289 --> 00:53:49,650  
evidence-based medicine and that's what

1309  
00:53:53,299 --> 00:53:51,299  
we're pushing for in treatments but also

1310  
00:53:55,130 --> 00:53:53,309  
evidence-based policy so we need to

1311  
00:53:57,109 --> 00:53:55,140  
think and should we be banned in flight

1312  
00:53:59,150 --> 00:53:57,119  
should we be screening incoming

1313  
00:54:00,740 --> 00:53:59,160

passengers should we be quarantine in

1314

00:54:02,120 --> 00:54:00,750

people when they don't have any signs of

1315

00:54:04,160 --> 00:54:02,130

infection these are the kind of things

1316

00:54:05,390 --> 00:54:04,170

that have been set up by certain

1317

00:54:07,549 --> 00:54:05,400

governments where there's no evidence

1318

00:54:09,589 --> 00:54:07,559

base for them and it's not good practice

1319

00:54:33,539 --> 00:54:09,599

so we need evidence based policy along

1320

00:54:37,990 --> 00:54:36,130

thank you for listening to the skeptic

1321

00:54:39,700 --> 00:54:38,000

zone and thank you for the people

1322

00:54:44,140 --> 00:54:39,710

writing in saying how much you enjoy our

1323

00:54:46,059 --> 00:54:44,150

new reporters Joe alabaster and highly

1324

00:54:48,370 --> 00:54:46,069

robertson more from both of those

1325

00:54:50,740 --> 00:54:48,380

wonderful ladies coming up in the coming

1326

00:54:53,859 --> 00:54:50,750

weeks and thank you to those people who

1327

00:54:59,289 --> 00:54:53,869

are buying the vaccination chronicles

1328

00:55:02,700 --> 00:54:59,299

DVD by visiting [www.mtv](http://www.mtv) scrolling down

1329

00:55:06,009 --> 00:55:02,710

on the left there and finding the link

1330

00:55:09,400 --> 00:55:06,019

\$12 posted anywhere in the world you'll

1331

00:55:12,160 --> 00:55:09,410

get the DVD signed by me and then it's

1332

00:55:15,099 --> 00:55:12,170

up to you to watch it if you want copy

1333

00:55:16,269 --> 00:55:15,109

it oh yes copy it and copy it and copy

1334

00:55:18,430 --> 00:55:16,279

it and give it to your friends you can

1335

00:55:20,799 --> 00:55:18,440

copy it and copy it and copy it let's

1336

00:55:24,430 --> 00:55:20,809

get lots of copies out there for at the

1337

00:55:27,400 --> 00:55:24,440

moment now this measles outbreak here in

1338

00:55:29,589 --> 00:55:27,410

the United States I guess things like

1339

00:55:31,690 --> 00:55:29,599

this are really needed and as ever thank

1340

00:55:34,059 --> 00:55:31,700

you to the people who are show your

1341

00:55:37,210 --> 00:55:34,069

support for the skeptic zone by chipping

1342

00:55:39,490 --> 00:55:37,220

in with a paypal and you can do that at

1343

00:55:43,089 --> 00:55:39,500

the skeptics own website as well much

1344

00:55:45,430 --> 00:55:43,099

appreciated and necessary for the

1345

00:55:49,749 --> 00:55:45,440

continuation of the show but now it's

1346

00:55:51,730 --> 00:55:49,759

time for me to start looking at packing

1347

00:55:54,519 --> 00:55:51,740

my bags for that long trip across the

1348

00:55:55,990 --> 00:55:54,529

Pacific and until next week where i'll

1349

00:55:58,569 --> 00:55:56,000

be back in sydney australia this is

1350

00:56:04,620 --> 00:55:58,579

richard sodas signing off from the San

1351

00:56:12,040 --> 00:56:07,030

you've been listening to the skeptic

1352

00:56:15,820 --> 00:56:12,050

zone visit our website at [www.skeptics](http://www.skeptics)