

Episode **589**

THE
**SKEPTIC
ZONE**
PODCAST

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The Hot Tub of Truth
with

Dr Erika Anderson
Dr Jean-Marc Roch Phd
Prof. Wendi Wampler
Brian Dunning
Susan Picard
Lisa Dunning
Richard Saunders

"The Dream" Podcast

Maynard with
Jo Benhamu



1
00:00:11,860 --> 00:00:09,100
welcome to the skeptic zone the podcast

2
00:00:13,940 --> 00:00:11,870
from Australia for science and reason

3
00:00:20,610 --> 00:00:13,950
[Music]

4
00:00:20,620 --> 00:00:31,880
I worked with that on the podcast that's

5
00:00:37,080 --> 00:00:35,130
so sneak peek behind the scenes of a

6
00:00:40,710 --> 00:00:37,090
podcast you can all hear me okay all

7
00:00:44,130 --> 00:00:40,720
right hello and welcome to the skeptics

8
00:00:47,160 --> 00:00:44,140
own podcast episode number 589 for the

9
00:00:49,230 --> 00:00:47,170
27th of January 2020 this week coming to

10
00:00:55,250 --> 00:00:49,240
you live from Portland Oregon

11
00:00:57,930 --> 00:00:55,260
[Applause]

12
00:01:01,229 --> 00:00:57,940
that's the sasquatch right you brought

13
00:01:03,090 --> 00:01:01,239

one hand it's wonderful to be here I'm

14

00:01:04,979 --> 00:01:03,100

about to give a talk about mystical

15

00:01:07,140 --> 00:01:04,989

energies and strange things like that

16

00:01:09,360 --> 00:01:07,150

but coming up on this week's show lots

17

00:01:12,690 --> 00:01:09,370

more from Maynard more interviews from

18

00:01:16,050 --> 00:01:12,700

skeptic on and we have the hot tub of

19

00:01:18,810 --> 00:01:16,060

truth now yesterday at Bryan Dunning's

20

00:01:21,360 --> 00:01:18,820

house in his hot tub we had a group of

21

00:01:25,080 --> 00:01:21,370

scientists and thinkers and some wine

22

00:01:27,480 --> 00:01:25,090

and we recorded a session of science and

23

00:01:30,720 --> 00:01:27,490

philosophy in the hot tub that's coming

24

00:01:33,330 --> 00:01:30,730

up on this week's show and if you all

25

00:01:37,940 --> 00:01:33,340

sound amazed out there you don't want to

26
00:01:40,440 --> 00:01:37,950
come this time yeah and as a special I

27
00:01:42,390 --> 00:01:40,450
don't often do this the show this week

28
00:01:44,340 --> 00:01:42,400
will be in stereo so if you listen

29
00:01:46,340 --> 00:01:44,350
through the headphones it would be like

30
00:01:49,500 --> 00:01:46,350
you're in the hot tub with us

31
00:01:51,210 --> 00:01:49,510
that's what listening for so all that

32
00:01:54,150 --> 00:01:51,220
coming up on this week's show but for

33
00:01:56,130 --> 00:01:54,160
now it's time for me to well to get on

34
00:01:59,680 --> 00:01:56,140
with my talk and while I do that I hope

35
00:02:03,530 --> 00:01:59,690
you enjoy the skeptic zone

36
00:02:11,840 --> 00:02:03,540
[Applause]

37
00:02:19,520 --> 00:02:11,850
[Music]

38
00:02:30,020 --> 00:02:19,530

join us now for drinking skeptically in

39

00:02:32,600 --> 00:02:30,030

the think tank there are stranger things

40

00:02:34,280 --> 00:02:32,610

to do than to sit in hot tub in the

41

00:02:35,840 --> 00:02:34,290

state of Oregon with somebody with a

42

00:02:39,050 --> 00:02:35,850

thermal camera running around it's

43

00:02:41,420 --> 00:02:39,060

nighttime it's not quite freely is it

44

00:02:43,160 --> 00:02:41,430

Brian Dunning from skeptoid comm no it

45

00:02:45,290 --> 00:02:43,170

is not it is extraordinarily warm

46

00:02:46,310 --> 00:02:45,300

tonight we've lost most of our snow

47

00:02:50,330 --> 00:02:46,320

today which I was very disappointed

48

00:02:52,970 --> 00:02:50,340

about me too to be honest me too I'm in

49

00:02:55,070 --> 00:02:52,980

a hot tub folks we're doing skeptics in

50

00:02:56,180 --> 00:02:55,080

the tub or as Maynard likes to call it

51

00:03:00,410 --> 00:02:56,190

the hot tub of truth

52

00:03:04,340 --> 00:03:00,420

Brian is gathered a group of interesting

53

00:03:05,810 --> 00:03:04,350

people to join us in our tub and one of

54

00:03:08,510 --> 00:03:05,820

the most interesting things is the life

55

00:03:11,449 --> 00:03:08,520

is variant here so I'm doing everything

56

00:03:14,300 --> 00:03:11,459

we have jean-marc welcome John mark

57

00:03:18,830 --> 00:03:14,310

thank you and who is a neuroscientist

58

00:03:22,340 --> 00:03:18,840

yes we also very lucky to have dr. Erica

59

00:03:24,320 --> 00:03:22,350

Anderson hello hello a new work in local

60

00:03:27,470 --> 00:03:24,330

hospitals here I do thank you

61

00:03:32,470 --> 00:03:27,480

all right we also have professor Wendy

62

00:03:43,190 --> 00:03:38,570

physics professor Wendy was my daughter

63

00:03:48,320 --> 00:03:43,200

Erica's physics professor and local

64

00:03:50,300 --> 00:03:48,330

skeptic Susan pecan hello shifting our

65

00:03:52,250 --> 00:03:50,310

positions here because we're making

66

00:03:55,790 --> 00:03:52,260

jokes about Archimedes just a little

67

00:03:58,540 --> 00:03:55,800

public but anyway everybody cheers and

68

00:04:01,100 --> 00:03:58,550

welcome to the hunt ups here

69

00:04:11,570 --> 00:04:01,110

not quite the same with plastic glasses

70

00:04:13,490 --> 00:04:11,580

Brydon we are now this is sort of like

71

00:04:15,140 --> 00:04:13,500

the think tank and long-term listeners

72

00:04:17,449 --> 00:04:15,150

to the skeptic zone podcast remember

73

00:04:19,040 --> 00:04:17,459

think tank will get together at the top

74

00:04:20,990 --> 00:04:19,050

of the industry have a few beers have

75

00:04:24,710 --> 00:04:21,000

some dinner and chat about sceptical

76

00:04:27,110 --> 00:04:24,720

issues of the day but a listener to the

77

00:04:30,290 --> 00:04:27,120

show is inspired to make series of

78

00:04:33,320 --> 00:04:30,300

questions and thoughts and the first one

79

00:04:34,700 --> 00:04:33,330

is they'll put to everybody here there's

80

00:04:39,310 --> 00:04:34,710

a very interesting question

81

00:04:42,110 --> 00:04:39,320

can science save the planet slash

82

00:04:46,460 --> 00:04:42,120

humanity should we leave it up to

83

00:04:50,240 --> 00:04:46,470

science to save our problems maybe the

84

00:04:52,370 --> 00:04:50,250

environment things like that Wendy why

85

00:04:54,380 --> 00:04:52,380

don't you pick up for that one I have a

86

00:05:04,700 --> 00:04:54,390

follow-up question are you saying like

87

00:05:05,570 --> 00:05:04,710

in an ideal world uh I mean yeah I think

88

00:05:07,970 --> 00:05:05,580

they're two different questions is

89

00:05:11,210 --> 00:05:07,980

science capable with the tools it has to

90

00:05:14,150 --> 00:05:11,220

solve the big problems yeah it's society

91

00:05:16,130 --> 00:05:14,160

open-minded enough to and educated

92

00:05:18,200 --> 00:05:16,140

enough to know what to do with that

93

00:05:21,860 --> 00:05:18,210

information to then further you know

94

00:05:24,350 --> 00:05:21,870

inform policy and funding and those

95

00:05:25,940 --> 00:05:24,360

sorts of things I mean that's I think in

96

00:05:28,550 --> 00:05:25,950

my head I don't know the answer to that

97

00:05:30,470 --> 00:05:28,560

I'm hopeful do you think I'll put it up

98

00:05:32,570 --> 00:05:30,480

to everybody you think that there's some

99

00:05:34,400 --> 00:05:32,580

people out there say don't worry science

100

00:05:36,290 --> 00:05:34,410

Oh solve the problems eventually don't

101
00:05:38,450 --> 00:05:36,300
worry if we do this that or the other I

102
00:05:40,430 --> 00:05:38,460
think absolutely I think it's more

103
00:05:42,710 --> 00:05:40,440
complicated than that it's like when

104
00:05:44,450 --> 00:05:42,720
they said I think we need to have as a

105
00:05:47,510 --> 00:05:44,460
society we need to have the desire to

106
00:05:50,510 --> 00:05:47,520
save ourselves from ourselves

107
00:05:53,029 --> 00:05:50,520
but if we if we have that desire at a

108
00:05:54,820 --> 00:05:53,039
society level then yes I think science

109
00:05:58,070 --> 00:05:54,830
can do it absolutely

110
00:06:04,700 --> 00:05:58,080
what should we do in the mean time I

111
00:06:07,070 --> 00:06:04,710
mean we can't just wait no changes

112
00:06:09,740 --> 00:06:07,080
within our culture there's a very fixed

113
00:06:15,010 --> 00:06:09,750

mindset about it'll be solved I don't

114

00:06:19,850 --> 00:06:17,990

a scale issue like all rights just me so

115

00:06:24,200 --> 00:06:19,860

I can't solve it exactly it's just the

116

00:06:26,300 --> 00:06:24,210

energy yeah I feel that

117

00:06:28,850 --> 00:06:26,310

economic theory has a big role to play

118

00:06:30,680 --> 00:06:28,860

there because economists can figure out

119

00:06:35,180 --> 00:06:30,690

what will work and what kinds of things

120

00:06:37,100 --> 00:06:35,190

will force the changes that we need the

121

00:06:39,649 --> 00:06:37,110

the interesting thing that that leads

122

00:06:41,270 --> 00:06:39,659

into though is ok now you've got to have

123

00:06:45,370 --> 00:06:41,280

some sort of a totalitarian government

124

00:06:48,499 --> 00:06:45,380

who will just take the economists

125

00:06:51,100 --> 00:06:48,509

policies and force them into law on and

126

00:06:53,390 --> 00:06:51,110

make that be the law of the land and

127

00:06:54,980 --> 00:06:53,400

then the next administration is going to

128

00:06:58,010 --> 00:06:54,990

come along and do who knows what with

129

00:07:00,499 --> 00:06:58,020

that same totalitarian power so it's

130

00:07:02,390 --> 00:07:00,509

it's it's one of these kind of it's one

131

00:07:05,029 --> 00:07:02,400

a situations where there's there's just

132

00:07:06,680 --> 00:07:05,039

no perfect solution yeah well I suppose

133

00:07:10,520 --> 00:07:06,690

the question is put it in thinking about

134

00:07:12,920 --> 00:07:10,530

the globally you know I mean the way the

135

00:07:14,810 --> 00:07:12,930

planets going at the moment and I guess

136

00:07:16,580 --> 00:07:14,820

the answer is no we can't sit back and

137

00:07:17,779 --> 00:07:16,590

just think oh the science will fix it

138

00:07:19,339 --> 00:07:17,789

it'll be all right

139

00:07:23,180 --> 00:07:19,349

it doesn't matter we all have to do what

140

00:07:25,520 --> 00:07:23,190

we can you know regardless but I wear

141

00:07:28,279 --> 00:07:25,530

science I guess where science could be

142

00:07:29,149 --> 00:07:28,289

said to be fixing things more and more

143

00:07:32,149 --> 00:07:29,159

is in your field

144

00:07:33,800 --> 00:07:32,159

erricka which is medicine mm-hm and even

145

00:07:35,390 --> 00:07:33,810

when I think back over the last 10 20

146

00:07:37,459 --> 00:07:35,400

years and you know better than I of

147

00:07:39,529 --> 00:07:37,469

course I think the advancements in

148

00:07:42,800 --> 00:07:39,539

medical medical science have been a

149

00:07:46,070 --> 00:07:42,810

standard oh definitely definitely

150

00:07:49,570 --> 00:07:46,080

it's yeah it's progressed immensely yeah

151
00:07:52,580 --> 00:07:49,580
but to save the planet Eire do you trust

152
00:07:54,290 --> 00:07:52,590
humanity that's a good question it's not

153
00:07:57,379 --> 00:07:54,300
just a thing of science how much

154
00:07:59,300 --> 00:07:57,389
influence do scientists really have over

155
00:08:02,420 --> 00:07:59,310
people and what's happening is it more a

156
00:08:04,670 --> 00:08:02,430
question of politics you know as does

157
00:08:07,640 --> 00:08:04,680
politics have more influence like in the

158
00:08:10,280 --> 00:08:07,650
history you always see like you know

159
00:08:14,000 --> 00:08:10,290
Renaissance oh my god episode of science

160
00:08:15,890 --> 00:08:14,010
and then like Dark Ages right so when

161
00:08:21,470 --> 00:08:15,900
when science does not have very much

162
00:08:37,279 --> 00:08:21,480
influence over people so you know that's

163
00:08:41,540 --> 00:08:37,289

a compressor science has been I do at

164

00:08:45,890 --> 00:08:41,550

the women politics and politicians to it

165

00:08:47,510 --> 00:08:45,900

next time yeah I know in my own country

166

00:08:50,060 --> 00:08:47,520

of Australia for many years I'm not sure

167

00:08:52,130 --> 00:08:50,070

what the situation now is we didn't have

168

00:08:53,510 --> 00:08:52,140

a minister for science for some reason

169

00:08:58,490 --> 00:08:53,520

and everyone thought that was a bit

170

00:09:00,140 --> 00:08:58,500

crazy Wow yeah yeah do we have a

171

00:09:05,800 --> 00:09:00,150

minister for science well you would

172

00:09:11,420 --> 00:09:09,020

science advisor yeah same technology

173

00:09:12,530 --> 00:09:11,430

advisers and I think early on in the

174

00:09:14,329 --> 00:09:12,540

administration

175

00:09:20,240 --> 00:09:14,339

pretty much everyone with any science

176
00:09:23,930 --> 00:09:20,250
background got sure what I'm not even

177
00:09:25,490 --> 00:09:23,940
sure if there is a what would you call

178
00:09:27,500 --> 00:09:25,500
it it's been so long I don't even know

179
00:09:28,820 --> 00:09:27,510
what the position is called but this

180
00:09:31,430 --> 00:09:28,830
colloquially we called the president's

181
00:09:33,440 --> 00:09:31,440
science advisor he's got an actual title

182
00:09:35,930 --> 00:09:33,450
it's like the chairman of the committee

183
00:09:37,610 --> 00:09:35,940
on yeah science and technology or

184
00:09:39,380 --> 00:09:37,620
something well we don't straight into

185
00:09:41,120 --> 00:09:39,390
politics much on the skeptic zone but in

186
00:09:44,000 --> 00:09:41,130
this case it's appropriate I think I

187
00:09:46,110 --> 00:09:44,010
wonder how far a scientific adviser

188
00:09:52,510 --> 00:09:46,120

would get in the current White House

189

00:09:56,860 --> 00:09:52,520

very funny well let me ask a question

190

00:09:59,200 --> 00:09:56,870

would it would it help if in elementary

191

00:10:01,920 --> 00:09:59,210

school middle high high school if kids

192

00:10:04,510 --> 00:10:01,930

were taught critical thinking skills and

193

00:10:07,560 --> 00:10:04,520

not just like you know what are the

194

00:10:10,710 --> 00:10:07,570

Socratic questions but actual real-world

195

00:10:13,450 --> 00:10:10,720

how do we analyze Gwyneth Paltrow's goop

196

00:10:15,310 --> 00:10:13,460

how do we know what's actually real that

197

00:10:17,320 --> 00:10:15,320

do I have a bit to say about that

198

00:10:18,760 --> 00:10:17,330

because when I studied in grad school I

199

00:10:20,800 --> 00:10:18,770

did I was in the physics department I

200

00:10:22,030 --> 00:10:20,810

did astrophysics but I studied brains

201
00:10:22,720 --> 00:10:22,040
and how they wired to learn physics

202
00:10:24,880 --> 00:10:22,730
mm-hm

203
00:10:27,010 --> 00:10:24,890
and one of the my research questions was

204
00:10:28,840 --> 00:10:27,020
how do students belief in solving

205
00:10:30,580 --> 00:10:28,850
physics problems like what what they're

206
00:10:32,110 --> 00:10:30,590
supposed to do affect like how

207
00:10:34,870 --> 00:10:32,120
successful they are in a physics class

208
00:10:36,610 --> 00:10:34,880
and what we've found through lots of

209
00:10:38,770 --> 00:10:36,620
studies where that students come in very

210
00:10:40,030 --> 00:10:38,780
authoritarian thinking like my job isn't

211
00:10:41,770 --> 00:10:40,040
to be a critical thinker it's to

212
00:10:45,100 --> 00:10:41,780
memorize something somebody else has

213
00:10:47,020 --> 00:10:45,110

told me and what we found is those

214

00:10:49,210 --> 00:10:47,030

students will not be successful in

215

00:10:51,400 --> 00:10:49,220

science engineering or math technology

216

00:10:53,140 --> 00:10:51,410

students so it's been like kind of the

217

00:10:55,270 --> 00:10:53,150

push of at least my class to kind of get

218

00:10:56,770 --> 00:10:55,280

them while we still can in college but

219

00:10:59,110 --> 00:10:56,780

the idea is it should not be happening

220

00:11:01,960 --> 00:10:59,120

in college these sorts of I love you

221

00:11:03,460 --> 00:11:01,970

thought she was sooner and they're just

222

00:11:05,560 --> 00:11:03,470

kind of not and so everybody's falling

223

00:11:07,390 --> 00:11:05,570

into that authoritarian just I'll trust

224

00:11:10,330 --> 00:11:07,400

what you say and I'm not going I don't

225

00:11:13,210 --> 00:11:10,340

need to even look into it further to

226

00:11:15,610 --> 00:11:13,220

feel like I understand it like I feel

227

00:11:17,350 --> 00:11:15,620

okay with somebody telling me and my

228

00:11:18,610 --> 00:11:17,360

assessment of that is open I understand

229

00:11:20,480 --> 00:11:18,620

it I don't need to go further you know

230

00:11:22,870 --> 00:11:20,490

and I think that gets at a root of like

231

00:11:27,800 --> 00:11:22,880

so many problems in education but

232

00:11:29,810 --> 00:11:27,810

politics and so histologically that's a

233

00:11:31,820 --> 00:11:29,820

good really good point so I don't know

234

00:11:34,880 --> 00:11:31,830

how probably all of these people in this

235

00:11:36,829 --> 00:11:34,890

hot tub in school it was way easier for

236

00:11:39,590 --> 00:11:36,839

me to memorize something that was

237

00:11:41,780 --> 00:11:39,600

logical that I could like kind of

238

00:11:43,940 --> 00:11:41,790

logically see my way through then just a

239

00:11:46,400 --> 00:11:43,950

memorize right so I don't know is it is

240

00:11:48,860 --> 00:11:46,410

it somehow like a predisposition of

241

00:11:56,139 --> 00:11:48,870

certain people to be able to be critical

242

00:12:01,400 --> 00:11:59,329

Oh in the years I see it happen I've

243

00:12:03,800 --> 00:12:01,410

dated my for my thesis and shows that if

244

00:12:06,079 --> 00:12:03,810

you build it right and you emphasize it

245

00:12:09,050 --> 00:12:06,089

appropriately and you you really kind of

246

00:12:11,210 --> 00:12:09,060

make sure it across every point in that

247

00:12:13,730 --> 00:12:11,220

class for instance that they're being

248

00:12:15,650 --> 00:12:13,740

challenged to be critical and and that

249

00:12:18,170 --> 00:12:15,660

then memorizing fails that you set them

250

00:12:23,510 --> 00:12:18,180

up over and over to feel it's gleefully

251

00:12:25,820 --> 00:12:23,520

fun you need to think but like yeah it

252

00:12:27,470 --> 00:12:25,830

works but it takes time effort and

253

00:12:30,170 --> 00:12:27,480

training and that's kind of what's

254

00:12:32,840 --> 00:12:30,180

tricky is it teachers you know I got

255

00:12:35,690 --> 00:12:32,850

lucky to get that training early on and

256

00:12:37,010 --> 00:12:35,700

a lot of people haven't and so wouldn't

257

00:12:38,870 --> 00:12:37,020

move these students don't get that

258

00:12:40,579 --> 00:12:38,880

training they statistically really

259

00:12:43,400 --> 00:12:40,589

struggle June here and any sort of stem

260

00:12:45,110 --> 00:12:43,410

field and then believe and then we are

261

00:12:47,720 --> 00:12:45,120

in the same place yeah people who don't

262

00:12:49,790 --> 00:12:47,730

know how to quickly think I'm interested

263

00:12:51,949 --> 00:12:49,800

because I I think that one of the

264

00:12:54,019 --> 00:12:51,959

aspects of critical thinking I like is

265

00:12:56,329 --> 00:12:54,029

it's so interesting because the topics

266

00:12:58,790 --> 00:12:56,339

in my field of skepticism I get to cover

267

00:13:00,829 --> 00:12:58,800

other really interesting things like are

268

00:13:03,079 --> 00:13:00,839

they ghosts and UFOs and monsters and

269

00:13:05,329 --> 00:13:03,089

how their people bend spoons and what is

270

00:13:07,519 --> 00:13:05,339

this pseudoscience and that's what

271

00:13:11,420 --> 00:13:07,529

really helped me become the critical

272

00:13:13,400 --> 00:13:11,430

thinker was the sheer curiosity and that

273

00:13:15,769 --> 00:13:13,410

stirred something in me you know it's

274

00:13:17,329 --> 00:13:15,779

the interest of passion I think oh no

275

00:13:18,650 --> 00:13:17,339

absolutely I just wanted to say with

276

00:13:21,139 --> 00:13:18,660

just talking about a little bit about

277

00:13:23,600 --> 00:13:21,149

the education system and then going back

278

00:13:25,579 --> 00:13:23,610

to the original question of how do you

279

00:13:26,720 --> 00:13:25,589

think science could save us some of the

280

00:13:29,780 --> 00:13:26,730

issues that we're having with the

281

00:13:31,010 --> 00:13:29,790

environment and climate change I think

282

00:13:42,070 --> 00:13:31,020

again going back

283

00:13:47,330 --> 00:13:45,440

trained to be critical thinkers and were

284

00:13:49,790 --> 00:13:47,340

just fed a bunch of information so I

285

00:13:51,890 --> 00:13:49,800

know from personally speaking I went to

286

00:13:54,890 --> 00:13:51,900

Catholic school for eight years and I

287

00:13:56,510 --> 00:13:54,900

learned absolutely nothing I had to

288

00:14:00,140 --> 00:13:56,520

memorize things that I had questions

289

00:14:02,870 --> 00:14:00,150

about and I'm slow at memorizing and it

290

00:14:05,150 --> 00:14:02,880

just never taught me how to think

291

00:14:07,220 --> 00:14:05,160

critically I just authoritarian you just

292

00:14:10,940 --> 00:14:07,230

do what everyone told me and I think

293

00:14:13,220 --> 00:14:10,950

that a lot of our issues can kind of

294

00:14:17,300 --> 00:14:13,230

stem from the educational systems not

295

00:14:20,090 --> 00:14:17,310

only in the US but abroad where they

296

00:14:22,130 --> 00:14:20,100

teach to one mindset or one brain type

297

00:14:23,660 --> 00:14:22,140

and there's this huge bell curve and

298

00:14:26,270 --> 00:14:23,670

variables of well you're a

299

00:14:27,500 --> 00:14:26,280

neuroscientist correct that people learn

300

00:14:29,330 --> 00:14:27,510

differently and there's so many

301
00:14:31,370 --> 00:14:29,340
different ways of learning but yet most

302
00:14:33,230 --> 00:14:31,380
schools are like here take this

303
00:14:34,940 --> 00:14:33,240
information regurgitate it out and I

304
00:14:36,860 --> 00:14:34,950
think that we from the start

305
00:14:38,300 --> 00:14:36,870
learned how to be critical and to think

306
00:14:39,980 --> 00:14:38,310
through some of these problems we didn't

307
00:14:42,020 --> 00:14:39,990
have some of these issues in our own

308
00:14:45,340 --> 00:14:42,030
society if we were educated properly

309
00:14:47,570 --> 00:14:45,350
yeah and and and that can come down to a

310
00:14:57,830 --> 00:14:47,580
particularly good teacher parent

311
00:15:01,130 --> 00:14:57,840
yeah inspiring teachers like Wendi is at

312
00:15:04,310 --> 00:15:01,140
a university here in Oregon and she's

313
00:15:07,040 --> 00:15:04,320

studying physics and one of the things

314

00:15:09,110 --> 00:15:07,050

that she got I guess hooked up with

315

00:15:12,170 --> 00:15:09,120

that's not the right word but hooked

316

00:15:15,830 --> 00:15:12,180

hooked on hooked on not look I don't

317

00:15:19,430 --> 00:15:15,840

know what your kind of thing is that

318

00:15:21,440 --> 00:15:19,440

they they gave the problem and said now

319

00:15:23,240 --> 00:15:21,450

figure it out and use whatever physics

320

00:15:25,910 --> 00:15:23,250

you need to figure the problem out so

321

00:15:27,740 --> 00:15:25,920

like trying to teach the you know the

322

00:15:30,170 --> 00:15:27,750

critical thinking oh I have to pull from

323

00:15:33,230 --> 00:15:30,180

here and here and here and she struggled

324

00:15:36,460 --> 00:15:33,240

because in high school she regurgitate

325

00:15:39,550 --> 00:15:36,470

it exactly what is

326

00:15:41,290 --> 00:15:39,560

oh my gosh what do I do and so she went

327

00:15:43,810 --> 00:15:41,300

to office hours and she just kept

328

00:15:45,490 --> 00:15:43,820

persevering and the teachers like I have

329

00:15:47,530 --> 00:15:45,500

to kind of reprogram your brain a little

330

00:15:50,139 --> 00:15:47,540

bit she's getting it now but it's been a

331

00:15:51,999 --> 00:15:50,149

huge learning curve so I think like we

332

00:15:54,370 --> 00:15:52,009

have to back up even further into middle

333

00:15:57,180 --> 00:15:54,380

school okay elementary arts it's Bailey

334

00:15:59,379 --> 00:15:57,190

entry yeah way back now to kindergarten

335

00:16:01,569 --> 00:15:59,389

but I'd say middle school is when they

336

00:16:03,280 --> 00:16:01,579

start giving you well here memorize this

337

00:16:04,930 --> 00:16:03,290

yeah and then hi Janet I was like here

338

00:16:06,490 --> 00:16:04,940

memorize this this and this and then oh

339

00:16:10,449 --> 00:16:06,500

by the way here's the real world and

340

00:16:12,699 --> 00:16:10,459

everyone goes I can't do it yes I guess

341

00:16:14,949 --> 00:16:12,709

won't memorization in the garden as well

342

00:16:17,410 --> 00:16:14,959

these are you entering abc15 after me

343

00:16:19,449 --> 00:16:17,420

don't know when the brain exactly is

344

00:16:22,180 --> 00:16:19,459

ready to do to start doing critical

345

00:16:27,100 --> 00:16:22,190

thinking I finish elementary might be a

346

00:16:29,259 --> 00:16:27,110

little yeah there was a lot of kids

347

00:16:32,050 --> 00:16:29,269

entities yeah some kids already very

348

00:16:36,759 --> 00:16:32,060

early on and others feel they they

349

00:16:38,650 --> 00:16:36,769

become adults yes so I see that and and

350

00:16:41,769 --> 00:16:38,660

there are still some people actually

351

00:16:44,470 --> 00:16:41,779

later in life they they know knew like

352

00:16:46,480 --> 00:16:44,480

critical thinking if even if you tell

353

00:16:49,710 --> 00:16:46,490

them all the benefit they can get from

354

00:16:53,559 --> 00:16:49,720

thinking critically they would rather

355

00:16:55,569 --> 00:16:53,569

sit down and and have somebody tell them

356

00:16:57,309 --> 00:16:55,579

okay today you're gonna wear this shirt

357

00:17:00,400 --> 00:16:57,319

and you're gonna button it up all the

358

00:17:03,250 --> 00:17:00,410

way and you allowed to do pull the

359

00:17:06,640 --> 00:17:03,260

sleeves or not you know they they want

360

00:17:11,620 --> 00:17:06,650

everything be laid out for them thinking

361

00:17:13,750 --> 00:17:11,630

critically is it's an effort they have

362

00:17:16,390 --> 00:17:13,760

to realize the benefit they can get from

363

00:17:21,189 --> 00:17:16,400

it and then they will be ready to to put

364

00:17:30,210 --> 00:17:21,199

on the effort that it takes also feels

365

00:17:34,210 --> 00:17:30,220

good because it feels loved really older

366

00:17:38,919 --> 00:17:34,220

all of us indistinct thank and water

367

00:17:40,780 --> 00:17:38,929

tank actually it does feel good but but

368

00:17:44,110 --> 00:17:40,790

I know some people who actually feel

369

00:17:47,289 --> 00:17:44,120

good with just the opposite let the

370

00:17:48,040 --> 00:17:47,299

thinking done by others and they sit

371

00:17:50,080 --> 00:17:48,050

back and

372

00:17:52,420 --> 00:17:50,090

and that's it what series I have

373

00:17:55,450 --> 00:17:52,430

engineering majors who think will just

374

00:17:57,430 --> 00:17:55,460

tell me and I'm like that's your job to

375

00:17:59,200 --> 00:17:57,440

solve very difficult problems I have to

376

00:18:00,040 --> 00:17:59,210

tell them literally and it's like

377

00:18:02,230 --> 00:18:00,050

they've never thought about it like

378

00:18:04,390 --> 00:18:02,240

nobody pays you the big bucks to solve

379

00:18:07,390 --> 00:18:04,400

problems that are who global mmm-hmm

380

00:18:08,620 --> 00:18:07,400

that's not your job that's just not your

381

00:18:11,050 --> 00:18:08,630

job your job is to take things that

382

00:18:13,180 --> 00:18:11,060

nobody knows how to solve and critically

383

00:18:15,310 --> 00:18:13,190

think fly your knowledge and construct

384

00:18:17,170 --> 00:18:15,320

some new unique answer that you can't

385

00:18:18,340 --> 00:18:17,180

just get from somebody else and some of

386

00:18:20,200 --> 00:18:18,350

them it's like the first time they ever

387

00:18:21,670 --> 00:18:20,210

thought about that and it's interesting

388

00:18:24,160 --> 00:18:21,680

cuz they'll fight me on it for like a

389

00:18:27,100 --> 00:18:24,170

full year of physics and I'm like that's

390

00:18:28,660 --> 00:18:27,110

the antithesis of engineering it's not

391

00:18:29,980 --> 00:18:28,670

thinking you know like I just can't it's

392

00:18:31,240 --> 00:18:29,990

the strangest thing so it's almost like

393

00:18:33,580 --> 00:18:31,250

they don't even know that that's a

394

00:18:36,970 --> 00:18:33,590

required part of these fields or

395

00:18:38,710 --> 00:18:36,980

building expertise or I don't know it

396

00:18:40,300 --> 00:18:38,720

kind of blows my mind still so I'm

397

00:18:46,720 --> 00:18:40,310

usually that jerk who has to just

398

00:18:51,250 --> 00:18:46,730

realize there are some people who are

399

00:18:54,250 --> 00:18:51,260

afraid of uncertainty and and science

400

00:18:56,320 --> 00:18:54,260

you know science likes uncertainty and

401
00:18:59,380 --> 00:18:56,330
asking more questions analyze we

402
00:19:01,090 --> 00:18:59,390
basically have that we were curious

403
00:19:04,900 --> 00:19:01,100
about everything yeah because we like

404
00:19:07,150 --> 00:19:04,910
uncertainty but some people don't like

405
00:19:09,070 --> 00:19:07,160
uncertainty they want things to be set

406
00:19:11,680 --> 00:19:09,080
in stone forever and they never have to

407
00:19:15,340 --> 00:19:11,690
question it so I think what we're up

408
00:19:17,560 --> 00:19:15,350
against is is really to do to foster

409
00:19:20,410 --> 00:19:17,570
that desire among people to to become

410
00:19:23,610 --> 00:19:20,420
critical thinkers and I think like Ryan

411
00:19:25,720 --> 00:19:23,620
said earlier it has to start with kids

412
00:19:29,190 --> 00:19:25,730
because they are much more malleable

413
00:19:35,049 --> 00:19:29,200

than ever and many times is simply

414

00:19:39,239 --> 00:19:37,330

yes there are curriculum out there based

415

00:19:42,249 --> 00:19:39,249

on like particularly K through five

416

00:19:45,700 --> 00:19:42,259

really just inquiry based where they're

417

00:19:47,110 --> 00:19:45,710

just given a context to study and then

418

00:19:50,049 --> 00:19:47,120

they can each pick their jobs within

419

00:19:51,970 --> 00:19:50,059

that stuff yeah so like there's a forest

420

00:19:54,220 --> 00:19:51,980

it's really cool there's no forest

421

00:19:56,320 --> 00:19:54,230

behind your school and you are going to

422

00:19:59,169 --> 00:19:56,330

map the forest out figure out when all

423

00:20:00,610 --> 00:19:59,179

the plants are categorize them and and

424

00:20:02,080 --> 00:20:00,620

in document that so some students like

425

00:20:03,519 --> 00:20:02,090

the documentation like they like to be

426

00:20:05,830 --> 00:20:03,529

the person documented some students like

427

00:20:07,389 --> 00:20:05,840

to be the people investigating and what

428

00:20:09,489 --> 00:20:07,399

happens is they pretty naturally engage

429

00:20:12,659 --> 00:20:09,499

themselves in science the problem is

430

00:20:15,609 --> 00:20:12,669

that is really in an infrastructure way

431

00:20:17,350 --> 00:20:15,619

extremely difficult to do it's hard to

432

00:20:20,139 --> 00:20:17,360

train teachers to do it it's hard to fit

433

00:20:30,999 --> 00:20:20,149

within our BS that's as much as all

434

00:20:32,470 --> 00:20:31,009

class but it's really hard to fit in

435

00:20:34,149 --> 00:20:32,480

within the constraints of what these

436

00:20:35,560 --> 00:20:34,159

teachers are forced to do with in terms

437

00:20:36,940 --> 00:20:35,570

of teaching to the tests and the

438

00:20:38,379 --> 00:20:36,950

standardized testing all that stuff so

439

00:20:41,019 --> 00:20:38,389

there are really great curriculum out

440

00:20:43,210 --> 00:20:41,029

there it's just like we're not right how

441

00:20:45,129 --> 00:20:43,220

do you get it distilled into the entire

442

00:20:46,659 --> 00:20:45,139

population of teachers and the policy is

443

00:20:52,720 --> 00:20:46,669

to change in terms of what they have to

444

00:20:54,090 --> 00:20:52,730

do and that's we've got good ideas how

445

00:20:57,039 --> 00:20:54,100

do you know Graham the whole society

446

00:20:59,169 --> 00:20:57,049

know that's getting it know it know that

447

00:21:01,090 --> 00:20:59,179

kind of correlates with neuroscience

448

00:21:02,859 --> 00:21:01,100

it's like you get to a certain age and

449

00:21:04,840 --> 00:21:02,869

you have neurons that are like firing up

450

00:21:06,460 --> 00:21:04,850

in the brain that have been firing up

451
00:21:08,680 --> 00:21:06,470
for a really long time and to change

452
00:21:11,409 --> 00:21:08,690
that pattern of behavior same thing with

453
00:21:14,560 --> 00:21:11,419
society it's harder but it's done they

454
00:21:17,230 --> 00:21:14,570
can't be last is much more blessed agree

455
00:21:19,779 --> 00:21:17,240
you society is also plastic but we're

456
00:21:21,460 --> 00:21:19,789
not exercising that at all to change

457
00:21:23,109 --> 00:21:21,470
some of these things that Brian knows a

458
00:21:30,070 --> 00:21:23,119
lot about this because he's got very old

459
00:21:32,560 --> 00:21:30,080
neurons I must say we move on to the

460
00:21:34,480 --> 00:21:32,570
next lesson to question behavior Wendy

461
00:21:37,790 --> 00:21:34,490
when you when you arrived this evening

462
00:21:40,760 --> 00:21:37,800
set alone we all admired your wonderful

463
00:21:42,680 --> 00:21:40,770

yes which had telescopes and everything

464

00:21:54,310 --> 00:21:42,690

the SETI Allen telescope array on the

465

00:21:59,960 --> 00:21:57,320

this is a completely free plug

466

00:22:02,510 --> 00:21:59,970

well that website if people would like

467

00:22:03,680 --> 00:22:02,520

to have a look and see some of the

468

00:22:05,870 --> 00:22:03,690

wonderful things that you will learn

469

00:22:08,780 --> 00:22:05,880

today where should they go that's the

470

00:22:15,500 --> 00:22:08,790

best nerdy clothing website I found it's

471

00:22:21,490 --> 00:22:15,510

so it's SVA H a usa.com lately if it's a

472

00:22:24,200 --> 00:22:21,500

word it's Faja or not so but it's great

473

00:22:29,720 --> 00:22:24,210

generating nerdy clothing and jewelry

474

00:22:32,890 --> 00:22:29,730

and dresses with pockets to open because

475

00:23:00,560 --> 00:22:40,180

oh yeah sure game my girlfriend's

476

00:23:02,030 --> 00:23:00,570

necklace we the next question and this

477

00:23:03,350 --> 00:23:02,040

can be the last question for tonight if

478

00:23:05,270 --> 00:23:03,360

you some show this will spark some

479

00:23:07,930 --> 00:23:05,280

interesting conversation comes to us

480

00:23:10,550 --> 00:23:07,940

from Michelle because ma who is the

481

00:23:14,640 --> 00:23:10,560

secretary of the Victorian skeptics the

482

00:23:26,820 --> 00:23:14,650

big skeptics in Australia and she asks

483

00:23:30,060 --> 00:23:26,830

my glasses are fogging up with what kind

484

00:23:33,320 --> 00:23:30,070

of studies should university students do

485

00:23:37,049 --> 00:23:33,330

to realistically help save the planet

486

00:23:41,100 --> 00:23:37,059

where our careers headed and what kind

487

00:23:43,950 --> 00:23:41,110

of graduates are needed so if we're

488

00:23:47,070 --> 00:23:43,960

talking about the recent worldwide

489

00:23:49,380 --> 00:23:47,080

movement against global warming and

490

00:23:54,900 --> 00:23:49,390

basically saving the planet if we can

491

00:23:57,390 --> 00:23:54,910

use that term what is good obviously

492

00:23:59,040 --> 00:23:57,400

STEM fields in problem-solving but you

493

00:24:01,020 --> 00:23:59,050

also meet a lot of communicators you

494

00:24:02,520 --> 00:24:01,030

need political science you need

495

00:24:04,560 --> 00:24:02,530

sociologists I mean it's kind of

496

00:24:06,120 --> 00:24:04,570

everybody is yeah I don't know that you

497

00:24:07,590 --> 00:24:06,130

could just pick out one set of fields

498

00:24:08,970 --> 00:24:07,600

and say that they're spear I mean also

499

00:24:10,830 --> 00:24:08,980

we need a funnel one I get money into

500

00:24:16,350 --> 00:24:10,840

science but like we said if we're not

501
00:24:18,690 --> 00:24:16,360
figuring out how to get social change at

502
00:24:21,810 --> 00:24:18,700
the interface of politics social science

503
00:24:22,830 --> 00:24:21,820
and health science communication ended

504
00:24:25,680 --> 00:24:22,840
education

505
00:24:28,549 --> 00:24:25,690
so if you have somebody who can master

506
00:24:33,660 --> 00:24:28,559
the interface of is more disciplines

507
00:24:36,000 --> 00:24:33,670
then that's exactly from what we've seen

508
00:24:38,640 --> 00:24:36,010
in medicine is that the most progress is

509
00:24:41,040 --> 00:24:38,650
done by people that major in two

510
00:24:43,440 --> 00:24:41,050
different fields like I'd say that there

511
00:24:46,350 --> 00:24:43,450
is a doctor and an engineer and then

512
00:24:48,150 --> 00:24:46,360
they go into bio prosthetic you know and

513
00:24:50,820 --> 00:24:48,160

they develop this arm that's like

514

00:24:52,890 --> 00:24:50,830

mechanical and because it means both it

515

00:24:55,110 --> 00:24:52,900

looks like if people go into one field

516

00:24:58,950 --> 00:24:55,120

it's really hard to make progress

517

00:25:01,290 --> 00:24:58,960

further in that field but if people go

518

00:25:02,970 --> 00:25:01,300

into two fields all of the sudden you

519

00:25:05,040 --> 00:25:02,980

know they can merge the two fields and

520

00:25:12,630 --> 00:25:05,050

make some really great progress it's a

521

00:25:16,710 --> 00:25:15,000

like my student think oh I'll just be a

522

00:25:18,060 --> 00:25:16,720

scientist locked away in a room and I

523

00:25:19,320 --> 00:25:18,070

won't have to talk to anybody or I'll be

524

00:25:21,630 --> 00:25:19,330

an engineer and never speak to anybody

525

00:25:23,910 --> 00:25:21,640

no if you can't communicate your ideas

526

00:25:25,530 --> 00:25:23,920

then they're not going no like that has

527

00:25:27,240 --> 00:25:25,540

to be a vital part they always complain

528

00:25:29,460 --> 00:25:27,250

they have to take speech and writing and

529

00:25:31,830 --> 00:25:29,470

I'm like that's gonna be 40 50 percent

530

00:25:33,900 --> 00:25:31,840

of your job you know I think we lose

531

00:25:36,049 --> 00:25:33,910

that and like talking about what what

532

00:25:38,100 --> 00:25:36,059

thing what skills are important

533

00:25:39,150 --> 00:25:38,110

communication should be an integral part

534

00:25:41,750 --> 00:25:39,160

of science

535

00:25:44,720 --> 00:25:41,760

you should start that at kindergarten

536

00:25:47,490 --> 00:25:44,730

but also maybe psychology yeah

537

00:25:49,830 --> 00:25:47,500

psychology is super-important just just

538

00:25:52,860 --> 00:25:49,840

to like read each other and read society

539

00:25:54,870 --> 00:25:52,870

and well it's such a common issue I

540

00:25:56,870 --> 00:25:54,880

suppose there's no real one area which

541

00:25:59,310 --> 00:25:56,880

you could say you should go into this

542

00:26:01,799 --> 00:25:59,320

because there are many areas you get

543

00:26:05,250 --> 00:26:01,809

well you just obviously this kind of

544

00:26:07,680 --> 00:26:05,260

prompt my usual lecture on stem versus

545

00:26:10,140 --> 00:26:07,690

steam which is kind of one of my one of

546

00:26:12,090 --> 00:26:10,150

my hot buttons the reason we have stem

547

00:26:14,340 --> 00:26:12,100

initiatives and not steam initiatives is

548

00:26:15,539 --> 00:26:14,350

because the United States anyway I don't

549

00:26:17,360 --> 00:26:15,549

know about Australia but the United

550

00:26:20,340 --> 00:26:17,370

States has a strategic shortage of

551
00:26:22,500 --> 00:26:20,350
graduates with stem degrees and a

552
00:26:25,260 --> 00:26:22,510
surplus of graduates and Arts degrees

553
00:26:29,250 --> 00:26:25,270
Art's being basically lawyers and

554
00:26:30,870 --> 00:26:29,260
business majors but also the humanities

555
00:26:33,330 --> 00:26:30,880
and visual and the Performing Arts but

556
00:26:35,520 --> 00:26:33,340
there's too many graduates with those

557
00:26:37,140 --> 00:26:35,530
and not enough jobs for them we're in

558
00:26:39,360 --> 00:26:37,150
the STEM fields there's not enough

559
00:26:41,610 --> 00:26:39,370
graduates and too many jobs so that's

560
00:26:43,740 --> 00:26:41,620
why they have stem initiatives but

561
00:26:45,750 --> 00:26:43,750
whenever I make that lecture people

562
00:26:47,250 --> 00:26:45,760
always they kind of throw a straw man

563
00:26:49,289 --> 00:26:47,260

argument what I just said they say oh

564

00:26:51,690 --> 00:26:49,299

you're saying arts aren't important and

565

00:26:53,520 --> 00:26:51,700

people shouldn't study arts that's not

566

00:26:56,240 --> 00:26:53,530

what we say and going back to your point

567

00:26:58,440 --> 00:26:56,250

okay about how you shouldn't specialize

568

00:27:00,510 --> 00:26:58,450

the stem initiatives they just encourage

569

00:27:03,030 --> 00:27:00,520

you to the degree that you graduate with

570

00:27:04,950 --> 00:27:03,040

should be a stem degree but hopefully

571

00:27:08,280 --> 00:27:04,960

you will have had a very broad field of

572

00:27:10,880 --> 00:27:08,290

study with all these kinds of diversions

573

00:27:13,310 --> 00:27:10,890

into the more artistic area

574

00:27:15,289 --> 00:27:13,320

as a scientist art has very much

575

00:27:17,900 --> 00:27:15,299

influenced my thinking and my abilities

576

00:27:19,280 --> 00:27:17,910

musician I dance if I didn't do those

577

00:27:21,350 --> 00:27:19,290

things and graduate school I would have

578

00:27:25,280 --> 00:27:21,360

not got a PhD in physics

579

00:27:27,380 --> 00:27:25,290

I did not like I think it's it's part of

580

00:27:30,980 --> 00:27:27,390

your body wiring I think that the

581

00:27:37,970 --> 00:27:30,990

greatest scientists history of science I

582

00:27:40,340 --> 00:27:37,980

mean look at the Vinci it was an artist

583

00:27:43,610 --> 00:27:40,350

too he played the violin and yes you

584

00:27:46,700 --> 00:27:43,620

know history is full of great scientists

585

00:28:04,789 --> 00:27:46,710

who who have a very keen artistic side

586

00:28:06,409 --> 00:28:04,799

but Brian Dunning sings because you're

587

00:28:08,659 --> 00:28:06,419

right few people going into STEM fields

588

00:28:10,909 --> 00:28:08,669

but I think it gets more at a lot of

589

00:28:12,650 --> 00:28:10,919

this sort of not letting them them not

590

00:28:14,539 --> 00:28:12,660

learning to critically think and then

591

00:28:16,340 --> 00:28:14,549

they're being completely swayed away

592

00:28:17,690 --> 00:28:16,350

from going into science and having them

593

00:28:19,310 --> 00:28:17,700

you know that feeling imposter syndrome

594

00:28:22,010 --> 00:28:19,320

we're getting half into it and leaving

595

00:28:23,180 --> 00:28:22,020

that happens all the time and usually

596

00:28:24,289 --> 00:28:23,190

what happens is junior year they don't

597

00:28:26,270 --> 00:28:24,299

have to critically think they're

598

00:28:28,310 --> 00:28:26,280

suddenly asked to and they'll eat right

599

00:28:30,049 --> 00:28:28,320

they're like this isn't for me I'm not

600

00:28:32,360 --> 00:28:30,059

smart enough I'm going so I wonder it

601
00:28:34,760 --> 00:28:32,370
like there's more systemic issues of

602
00:28:37,310 --> 00:28:34,770
foot then I you know so I am I don't

603
00:28:38,930 --> 00:28:37,320
mind the steam thing art was hugely

604
00:28:40,310 --> 00:28:38,940
important in my life and I'm lucky that

605
00:28:41,930 --> 00:28:40,320
I went to a public school where there

606
00:28:43,520 --> 00:28:41,940
was a lot of art supporting because the

607
00:28:45,350 --> 00:28:43,530
ones around me didn't have it but if

608
00:28:47,720 --> 00:28:45,360
your degree was in dance would you be a

609
00:28:55,549 --> 00:28:47,730
physics professor right now I teach a

610
00:29:04,369 --> 00:28:55,559
physics of dancing at COC CEO in town

611
00:29:08,460 --> 00:29:06,810
I'm a question I don't think I'd have

612
00:29:10,259 --> 00:29:08,470
gotten through grad school I was in a

613
00:29:12,149 --> 00:29:10,269

band and I dance a lot and that was the

614

00:29:14,669 --> 00:29:12,159

necessary kind of outlet my brain needed

615

00:29:16,320 --> 00:29:14,679

and to solve their problems because you

616

00:29:18,090 --> 00:29:16,330

know problems ourself with focus somehow

617

00:29:20,070 --> 00:29:18,100

if they're diffusely solved and you're

618

00:29:22,529 --> 00:29:20,080

switching gears that I yeah that other

619

00:29:24,389 --> 00:29:22,539

activity brought about like lots of

620

00:29:27,049 --> 00:29:24,399

really beneficial things in my mind and

621

00:29:30,210 --> 00:29:27,059

sanity as well in grad school that's

622

00:29:31,590 --> 00:29:30,220

more than one yeah and so I don't know

623

00:29:34,259 --> 00:29:31,600

if I don't know if I'd have gotten a PhD

624

00:29:36,600 --> 00:29:34,269

without dancing and playing well sweet I

625

00:29:38,490 --> 00:29:36,610

like that it's really yeah four years

626

00:29:41,039 --> 00:29:38,500

ago I think I had travelled from Sydney

627

00:29:43,259 --> 00:29:41,049

to Canberra to to see a lecture and I

628

00:29:45,690 --> 00:29:43,269

don't often do this and the reason why

629

00:29:46,129 --> 00:29:45,700

it was because the lecturer was Alan

630

00:29:51,950 --> 00:29:46,139

Alda

631

00:29:57,950 --> 00:29:55,680

he gave it talk about science and art

632

00:30:01,080 --> 00:29:57,960

being long-lost lovers

633

00:30:03,659 --> 00:30:01,090

oh yeah and he doesn't podcast now and

634

00:30:05,310 --> 00:30:03,669

he's a great scientific inspiration

635

00:30:07,110 --> 00:30:05,320

element people just think of him as

636

00:30:10,649 --> 00:30:07,120

Hawkeye for a match or some funny movies

637

00:30:11,700 --> 00:30:10,659

or whatever but he is passion in life is

638

00:30:14,279 --> 00:30:11,710

science

639

00:30:17,430 --> 00:30:14,289

it really is but Celine sonatas long

640

00:30:19,350 --> 00:30:17,440

lost lovers yeah wonderful yeah I find

641

00:30:21,450 --> 00:30:19,360

parallels in teaching they're both all

642

00:30:22,889 --> 00:30:21,460

the time yeah where they're both solving

643

00:30:25,350 --> 00:30:22,899

different kinds of problems in very

644

00:30:28,110 --> 00:30:25,360

similar ways by applying some concept to

645

00:30:30,119 --> 00:30:28,120

a particular either physical situation

646

00:30:32,009 --> 00:30:30,129

or piece of music and trying to develop

647

00:30:34,440 --> 00:30:32,019

that into their own unique and a

648

00:30:38,519 --> 00:30:34,450

solution or statement I I love having

649

00:30:39,629 --> 00:30:38,529

the the to kind of I don't know I like

650

00:30:41,910 --> 00:30:39,639

that they're lovers I remember that

651

00:30:44,010 --> 00:30:41,920

intertwine in their own way

652

00:30:48,150 --> 00:30:44,020

very poetic and then I get excited when

653

00:30:50,280 --> 00:30:48,160

you have a band NERD day and my two

654

00:30:51,900 --> 00:30:50,290

passions in one place and then they all

655

00:30:54,840 --> 00:30:51,910

just like wow you're it over now and

656

00:30:56,760 --> 00:30:54,850

it's I think that's a wonderful thought

657

00:31:04,730 --> 00:30:56,770

to leave our listeners with that science

658

00:31:07,200 --> 00:31:04,740

cannot are indeed long-lost lovers oh

659

00:31:09,390 --> 00:31:07,210

what a pleasant evening this has been in

660

00:31:12,420 --> 00:31:09,400

the arrogance no there is no look all

661

00:31:15,360 --> 00:31:12,430

around us this snow melts and then being

662

00:31:19,260 --> 00:31:15,370

beautiful old tree look at that that is

663

00:31:21,450 --> 00:31:19,270

beautiful tree tree well I'd like to

664

00:31:24,990 --> 00:31:21,460

thank John monk thank you very much when

665

00:31:26,310 --> 00:31:25,000

I kept them desert I'd certainly like to

666

00:31:28,320 --> 00:31:26,320

thank Garriga thank you very much hey

667

00:31:29,810 --> 00:31:28,330

here welcome it's my notes I'm sorry my

668

00:31:34,590 --> 00:31:29,820

pleasure

669

00:31:50,520 --> 00:31:34,600

Wendy thank you indeed Susan thanks for

670

00:32:06,000 --> 00:31:50,530

having me and the refills I must say and

671

00:32:13,850 --> 00:32:06,010

Brian Dunning from skip guitar from

672

00:32:30,310 --> 00:32:21,640

[Music]

673

00:32:33,880 --> 00:32:30,320

Canberra skeptics proudly presents a

674

00:32:38,060 --> 00:32:33,890

contemporary look at scams in Australia

675

00:32:41,890 --> 00:32:38,070

Thursday the 13th of February 2026 p.m.

676
00:32:43,780 --> 00:32:41,900
to 7:30 p.m. the speaker is Alex meanly

677
00:32:45,980 --> 00:32:43,790
[Music]

678
00:32:48,530 --> 00:32:45,990
now this will be at the Belconnen

679
00:32:52,970 --> 00:32:48,540
community service 26 Chandler Street

680
00:32:55,070 --> 00:32:52,980
Belconnen a CT and the cost is free scam

681
00:32:58,160 --> 00:32:55,080
watch run by the Australian Competition

682
00:33:01,880 --> 00:32:58,170
and Consumer Commission a Triple C

683
00:33:03,950 --> 00:33:01,890
receives around 500 reports of scams

684
00:33:06,650 --> 00:33:03,960
from the public every day

685
00:33:09,860 --> 00:33:06,660
Alex meanly will provide an overview of

686
00:33:13,370 --> 00:33:09,870
what scams affected Australians the most

687
00:33:16,820 --> 00:33:13,380
in 2019 and are affecting Australians in

688
00:33:19,480 --> 00:33:16,830

early 2020 how they work and how scams

689

00:33:22,070 --> 00:33:19,490

can be detected there will be a queue a

690

00:33:25,040 --> 00:33:22,080

discussion of some of the stranger scams

691

00:33:27,740 --> 00:33:25,050

we've seen reported and an explanation

692

00:33:31,340 --> 00:33:27,750

of the government's latest measures to

693

00:33:33,350 --> 00:33:31,350

stop scams alex is an assistant director

694

00:33:36,860 --> 00:33:33,360

in the Australian Competition and

695

00:33:40,130 --> 00:33:36,870

Consumer Commission scam watch dinner

696

00:33:42,710 --> 00:33:40,140

will follow the lecture to RSVP for the

697

00:33:44,480 --> 00:33:42,720

dinner please e-mail canberra skeptics

698

00:33:46,850 --> 00:33:44,490

at gmail.com

699

00:33:49,220 --> 00:33:46,860

that's a contemporary look at scams in

700

00:33:51,590 --> 00:33:49,230

Australia Thursday the 13th of February

701

00:33:53,690 --> 00:33:51,600

2020 and for more information just

702

00:33:56,510 --> 00:33:53,700

follow the links in this week's show

703

00:33:56,520 --> 00:34:06,230

[Music]

704

00:34:18,330 --> 00:34:11,220

so many books to read so many podcasts

705

00:34:29,370 --> 00:34:18,340

to listen to all those videos online the

706

00:34:31,650 --> 00:34:29,380

skeptic zone recommends it's not often I

707

00:34:35,130 --> 00:34:31,660

get the time to just listen to other

708

00:34:38,190 --> 00:34:35,140

podcasts I try I never miss an episode

709

00:34:41,730 --> 00:34:38,200

of skeptoid but don't tell Brian Dunning

710

00:34:45,390 --> 00:34:41,740

that sometimes I listen to true crime

711

00:34:49,080 --> 00:34:45,400

podcasts they can be gripping books not

712

00:34:50,640 --> 00:34:49,090

so much as for me anyway hearing the

713

00:34:54,030 --> 00:34:50,650

words is a better way for me to

714

00:34:56,159 --> 00:34:54,040

assimilate information but just in the

715

00:35:00,510 --> 00:34:56,169

last week I was recommended a podcast

716

00:35:02,910 --> 00:35:00,520

from the USA called the dream not much

717

00:35:06,000 --> 00:35:02,920

can be gleaned from the title it could

718

00:35:08,310 --> 00:35:06,010

relate to just about anything this

719

00:35:13,530 --> 00:35:08,320

podcast well series one anyway is

720

00:35:16,470 --> 00:35:13,540

devoted to M L M's let's multi-level

721

00:35:19,260 --> 00:35:16,480

marketing schemes you know the sort of

722

00:35:22,110 --> 00:35:19,270

thing sometimes called pyramid schemes

723

00:35:25,050 --> 00:35:22,120

this is where you get in on the ground

724

00:35:28,260 --> 00:35:25,060

level of a product say makeup or some

725

00:35:31,680 --> 00:35:28,270

so-called health supplement and try to

726

00:35:35,250 --> 00:35:31,690

sell it or better yet fig you and the

727

00:35:38,400 --> 00:35:35,260

company try to get other people friends

728

00:35:41,720 --> 00:35:38,410

family anyone at all to come on board

729

00:35:44,460 --> 00:35:41,730

but under you as you move up the ladder

730

00:35:51,630 --> 00:35:44,470

the first episode of this podcast is

731

00:35:57,550 --> 00:35:55,360

Podcast host Jane Marie and her partner

732

00:36:00,700 --> 00:35:57,560

Dan Gallucci together with other

733

00:36:03,880 --> 00:36:00,710

producers take a long hard look and

734

00:36:06,250 --> 00:36:03,890

sometimes a harrowing look at the MLM

735

00:36:08,110 --> 00:36:06,260

industry in the United States of course

736

00:36:11,310 --> 00:36:08,120

the concept is the same all over the

737

00:36:15,040 --> 00:36:11,320

world and how they are in the end

738

00:36:17,770 --> 00:36:15,050

destined to fail fail that is for the

739

00:36:19,810 --> 00:36:17,780

people roped in on the ground level

740

00:36:21,640 --> 00:36:19,820

but for those calling the shots at the

741

00:36:23,740 --> 00:36:21,650

top it's a different story

742

00:36:26,980 --> 00:36:23,750

have you ever heard of the aeroplane

743

00:36:29,580 --> 00:36:26,990

game this is where you get invited to a

744

00:36:32,050 --> 00:36:29,590

party oh bring lots of money with you

745

00:36:34,510 --> 00:36:32,060

thousands of dollars pounds euros

746

00:36:38,590 --> 00:36:34,520

whatever and buy a ticket for a plane

747

00:36:41,410 --> 00:36:38,600

ride that goes nowhere but if you can

748

00:36:45,010 --> 00:36:41,420

convince more people to join your flight

749

00:36:47,380 --> 00:36:45,020

you can get promoted to crew level then

750

00:36:50,350 --> 00:36:47,390

take a cut of the money they bring to

751
00:36:51,400 --> 00:36:50,360
buy their ticket next level up and you

752
00:36:55,600 --> 00:36:51,410
can be a co-pilot

753
00:36:58,930 --> 00:36:55,610
then pilot the catch more and more and

754
00:37:01,690 --> 00:36:58,940
more people and needed to be recruited

755
00:37:04,360 --> 00:37:01,700
to keep the money coming in in order for

756
00:37:07,660 --> 00:37:04,370
everybody to move up the chain no

757
00:37:10,390 --> 00:37:07,670
pyramid in the end there are simply not

758
00:37:13,450 --> 00:37:10,400
enough people left to recruit and that's

759
00:37:16,480 --> 00:37:13,460
when the game falls apart leaving many

760
00:37:20,110 --> 00:37:16,490
people thousands of dollars or whatever

761
00:37:22,900 --> 00:37:20,120
worse off this game is explained in

762
00:37:24,910 --> 00:37:22,910
detail including an interview of someone

763
00:37:29,520 --> 00:37:24,920

who was caught up in it in the podcast

764

00:37:31,990 --> 00:37:29,530

the dream series one looks at many MLMs

765

00:37:35,260 --> 00:37:32,000

going back decades and the real-life

766

00:37:37,840 --> 00:37:35,270

effects on some of the family members of

767

00:37:39,940 --> 00:37:37,850

Jayne Murray in another episode one of

768

00:37:41,880 --> 00:37:39,950

the producers even signs up to hopefully

769

00:37:46,270 --> 00:37:41,890

sell a range of what turns out to be

770

00:37:49,600 --> 00:37:46,280

mediocre cosmetics but as good as series

771

00:37:52,380 --> 00:37:49,610

one years I found that series two to be

772

00:37:55,540 --> 00:37:52,390

every bit as good and of particular

773

00:37:58,200 --> 00:37:55,550

interest to skeptics for this series

774

00:38:01,200 --> 00:37:58,210

takes a look at the wellness industry

775

00:38:04,799 --> 00:38:01,210

vitamins and supplements and

776

00:38:09,660 --> 00:38:04,809

to be frank snake oil here's a clip from

777

00:38:11,790 --> 00:38:09,670

episode 4 of series 2 last episode we

778

00:38:13,290 --> 00:38:11,800

heard from Catherine Price a science

779

00:38:15,569 --> 00:38:13,300

journalist who wrote a book called vitae

780

00:38:17,430 --> 00:38:15,579

mania Catherine's the woman who convinced

781

00:38:19,290 --> 00:38:17,440

Dan former lover of vitamins and

782

00:38:21,900 --> 00:38:19,300

supplements to throw out all of his

783

00:38:23,490 --> 00:38:21,910

pills tinctures and powders and resync

784

00:38:24,809 --> 00:38:23,500

the amount of money and energy he was

785

00:38:27,390 --> 00:38:24,819

putting into his daily supplement

786

00:38:29,520 --> 00:38:27,400

routine this was for two reasons one

787

00:38:31,260 --> 00:38:29,530

because he couldn't trust that all the

788

00:38:33,720 --> 00:38:31,270

ingredients on the label were actually

789

00:38:35,880 --> 00:38:33,730

in the supplement he was taking and two

790

00:38:37,859 --> 00:38:35,890

even if the ingredients were what the

791

00:38:39,450 --> 00:38:37,869

manufacturers claim they were there was

792

00:38:40,920 --> 00:38:39,460

almost no chance that studies had been

793

00:38:42,870 --> 00:38:40,930

done on each of these products that

794

00:38:44,280 --> 00:38:42,880

could explain the efficacy or potential

795

00:38:47,430 --> 00:38:44,290

side effects of what he was putting in

796

00:38:49,349 --> 00:38:47,440

his body that lack of information was a

797

00:38:51,030 --> 00:38:49,359

result of a series of legislative wins

798

00:38:53,040 --> 00:38:51,040

for the supplement industry that left

799

00:38:54,960 --> 00:38:53,050

the FDA the government agency that's

800

00:38:58,380 --> 00:38:54,970

supposed to regulate these products with

801
00:39:01,829 --> 00:38:58,390
very little power to do so this rang a

802
00:39:05,190 --> 00:39:01,839
very loud and familiar Bell with me just

803
00:39:07,260 --> 00:39:05,200
like the USA Australia too has had laws

804
00:39:09,180 --> 00:39:07,270
and regulations regarding so-called

805
00:39:11,579 --> 00:39:09,190
alternative medicine and dietary

806
00:39:15,329 --> 00:39:11,589
supplements watered down to such a

807
00:39:18,480 --> 00:39:15,339
degree that almost anything no matter

808
00:39:21,289 --> 00:39:18,490
how far-fetched can be marketed or sold

809
00:39:24,599 --> 00:39:21,299
as some sort of cure in orbit named

810
00:39:27,569 --> 00:39:24,609
homeopathy is a prime example in any

811
00:39:30,150 --> 00:39:27,579
rigorous system this absurd travesty

812
00:39:32,670 --> 00:39:30,160
would never be allowed to be marketed or

813
00:39:35,670 --> 00:39:32,680

sold if any medical claims were made

814

00:39:37,920 --> 00:39:35,680

whatsoever we also learn in this episode

815

00:39:41,309 --> 00:39:37,930

of why those peddling supplements in the

816

00:39:43,589 --> 00:39:41,319

USA have such clout here's a clip

817

00:39:46,440 --> 00:39:43,599

featuring Catherine Price the author of

818

00:39:48,960 --> 00:39:46,450

Vital mania these dietary supplement

819

00:39:51,089 --> 00:39:48,970

industry groups did very smart things

820

00:39:53,160 --> 00:39:51,099

like they they used all the dietary

821

00:39:55,950 --> 00:39:53,170

supplement stores in the country which

822

00:39:58,020 --> 00:39:55,960

obviously had a vested interest in being

823

00:39:59,819 --> 00:39:58,030

able to sell more products as basically

824

00:40:01,579 --> 00:39:59,829

a little outposts where consumers could

825

00:40:03,839 --> 00:40:01,589

come in and sign petitions to Congress

826

00:40:05,609 --> 00:40:03,849

do you know fighting back against the

827

00:40:07,770 --> 00:40:05,619

suppose and things the FDA was doing

828

00:40:09,720 --> 00:40:07,780

they would give discounts if he wrote to

829

00:40:11,339 --> 00:40:09,730

Congress members they would shroud you

830

00:40:13,710 --> 00:40:11,349

know certain areas of the store in black

831

00:40:15,240 --> 00:40:13,720

- supposedly show you what was going to

832

00:40:17,700 --> 00:40:15,250

happen if the FDA

833

00:40:21,180 --> 00:40:17,710

got its way my favorite example was this

834

00:40:24,330 --> 00:40:21,190

1993 ad that was put on by a supplement

835

00:40:26,430 --> 00:40:24,340

lobbying group that starts with us like

836

00:40:27,870 --> 00:40:26,440

black screen and the SWAT team jumping

837

00:40:32,580 --> 00:40:27,880

out of the back of a van with scary

838

00:40:34,800 --> 00:40:32,590

music and they run up the stairs of this

839

00:40:37,410 --> 00:40:34,810

mansion and then they confront this man

840

00:40:39,270 --> 00:40:37,420

in his bathrobe you know guns are drawn

841

00:40:41,100 --> 00:40:39,280

and the man turns around and it turns

842

00:40:43,080 --> 00:40:41,110

out that it's Mel Gibson and he's got a

843

00:40:45,620 --> 00:40:43,090

bottle of vitamins in his hand and he

844

00:40:53,660 --> 00:40:45,630

says something essentially this is

845

00:41:02,070 --> 00:40:57,990

vitamin C you know like in oranges and

846

00:41:04,890 --> 00:41:02,080

then this screen cuts to black preying

847

00:41:07,640 --> 00:41:04,900

on people's fear of big government big

848

00:41:10,170 --> 00:41:07,650

father the irony is that large

849

00:41:12,290 --> 00:41:10,180

multinationals are responsible for many

850

00:41:15,930 --> 00:41:12,300

products in the vitamin and supplement

851
00:41:19,140 --> 00:41:15,940
game but getting back to watering down

852
00:41:21,630 --> 00:41:19,150
regulations is one last clip from this

853
00:41:24,330 --> 00:41:21,640
episode that could have been written for

854
00:41:25,890 --> 00:41:24,340
Australia another thing that the bill

855
00:41:28,710 --> 00:41:25,900
said is that companies are only required

856
00:41:30,780 --> 00:41:28,720
to send the FDA information that

857
00:41:33,180 --> 00:41:30,790
indicates why they believe the new

858
00:41:35,160 --> 00:41:33,190
ingredients will be safe and they only

859
00:41:38,580 --> 00:41:35,170
need to do it 75 days prior to the

860
00:41:41,000 --> 00:41:38,590
product going to market now it's

861
00:41:43,890 --> 00:41:41,010
actually loosened now you don't have to

862
00:41:47,550 --> 00:41:43,900
send in anything you just have to have

863
00:41:49,350 --> 00:41:47,560

it on hand that you know that you like

864

00:41:51,480 --> 00:41:49,360

in your own filing cabinet you need to

865

00:41:53,070 --> 00:41:51,490

have a piece of paper that says this is

866

00:41:54,990 --> 00:41:53,080

where our product works this is why we

867

00:41:58,080 --> 00:41:55,000

believe our products works this is from

868

00:42:00,300 --> 00:41:58,090

the study just like you saying I think

869

00:42:02,430 --> 00:42:00,310

this works right I guess it would have

870

00:42:03,930 --> 00:42:02,440

to be convincing to the FDA if you had

871

00:42:06,870 --> 00:42:03,940

gone to court or something like that but

872

00:42:09,510 --> 00:42:06,880

no one does so it doesn't matter this is

873

00:42:11,370 --> 00:42:09,520

from the FDA you are responsible for

874

00:42:13,710 --> 00:42:11,380

determining what information provides

875

00:42:14,750 --> 00:42:13,720

the basis for your conclusion that's

876

00:42:18,090 --> 00:42:14,760

terrifying

877

00:42:20,490 --> 00:42:18,100

amazing if you ever visit a pharmacy in

878

00:42:23,310 --> 00:42:20,500

Australia look at the products on sale

879

00:42:26,070 --> 00:42:23,320

they will have printed on them somewhere

880

00:42:29,080 --> 00:42:26,080

normally in small print either aust-r

881

00:42:35,350 --> 00:42:29,090

that's a UST

882

00:42:37,090 --> 00:42:35,360

for regulated or Aust I4 listed hostile

883

00:42:40,350 --> 00:42:37,100

products only need in theory to have

884

00:42:43,480 --> 00:42:40,360

some sort of evidence of efficacy in

885

00:42:45,970 --> 00:42:43,490

practice many are not even checked by

886

00:42:52,810 --> 00:42:45,980

the TGA the therapeutics Goods

887

00:42:56,140 --> 00:42:52,820

Administration this podcast at times

888

00:42:57,790 --> 00:42:56,150

gets very personal at times alarming but

889

00:42:58,570 --> 00:42:57,800

at all times entertaining and

890

00:43:01,330 --> 00:42:58,580

educational

891

00:43:04,780 --> 00:43:01,340

from multi-level marketing in series 1

892

00:43:11,560 --> 00:43:04,790

to the wellness industry in series 2 the

893

00:43:12,970 --> 00:43:11,570

skeptics own recommends the dream for

894

00:43:15,040 --> 00:43:12,980

more information about this podcast

895

00:43:17,980 --> 00:43:15,050

follow the link in this week's show

896

00:43:21,400 --> 00:43:17,990

notes or simply search for the dream

897

00:43:22,000 --> 00:43:21,410

podcast with thanks to Michelle because

898

00:43:24,410 --> 00:43:22,010

MA

899

00:43:34,569 --> 00:43:24,420

for recommending it to me

900

00:43:38,900 --> 00:43:37,670

i'm mick west in my podcast tells from

901
00:43:40,280 --> 00:43:38,910
the rabbit-hole i have extended

902
00:43:42,589 --> 00:43:40,290
conversations with people who have been

903
00:43:44,060 --> 00:43:42,599
involved in conspiracy culture i did

904
00:43:45,319 --> 00:43:44,070
this for a couple of reasons firstly

905
00:43:47,000 --> 00:43:45,329
because it's really interesting these

906
00:43:48,710 --> 00:43:47,010
people have great stories about how they

907
00:43:50,569 --> 00:43:48,720
fell down the conspiracy theory rabbit

908
00:43:52,370 --> 00:43:50,579
hole while they did down there and what

909
00:43:53,569 --> 00:43:52,380
it was that helped them out sometimes i

910
00:43:54,980 --> 00:43:53,579
also talk to people to investigate

911
00:43:56,510 --> 00:43:54,990
conspiracy theories and they have

912
00:43:58,849 --> 00:43:56,520
equally fascinating stories from the

913
00:44:00,109 --> 00:43:58,859

other side secondly I want to understand

914

00:44:01,520 --> 00:44:00,119

how best to prevent the spread of

915

00:44:03,589 --> 00:44:01,530

conspiracy theories and misinformation

916

00:44:06,109 --> 00:44:03,599

which is an increasing problem in a time

917

00:44:07,520 --> 00:44:06,119

when alternative media is exploding the

918

00:44:09,859 --> 00:44:07,530

best way to do this is to communicate

919

00:44:12,020 --> 00:44:09,869

effectively with the people involved and

920

00:44:15,200 --> 00:44:12,030

the best way to do that with a nice long

921

00:44:18,240 --> 00:44:15,210

chat check it out tales from the rabbit

922

00:44:26,609 --> 00:44:18,250

hole TFG RH com

923

00:44:36,829 --> 00:44:31,600

years may not spooky action at a

924

00:44:43,770 --> 00:44:41,370

Billu here hi Joe how I am I'm good well

925

00:44:44,790 --> 00:44:43,780

god he always amazes me I know look I

926

00:44:46,560 --> 00:44:44,800

was just about I was on my way to my

927

00:44:49,380 --> 00:44:46,570

lamb I was about to week there too and

928

00:44:51,030 --> 00:44:49,390

but look what was it like lamb - oh and

929

00:44:52,470 --> 00:44:51,040

what's it like all I don't know yet cuz

930

00:44:54,060 --> 00:44:52,480

I'm here talking to you I know we're

931

00:44:56,280 --> 00:44:54,070

both here we should be using that's what

932

00:44:58,320 --> 00:44:56,290

we do for you the listener now what do a

933

00:45:01,320 --> 00:44:58,330

ward you gave was I gave the bent spoon

934

00:45:03,120 --> 00:45:01,330

award and now what I want to know was

935

00:45:04,349 --> 00:45:03,130

were the people have worked on that SBS

936

00:45:06,900 --> 00:45:04,359

show the ones that used to work on the

937

00:45:09,480 --> 00:45:06,910

ABC show that almost won a bin spoon no

938

00:45:15,890 --> 00:45:09,490

no no although we have awarded the bent

939

00:45:18,810 --> 00:45:15,900

spoon to an ABC show which was about no

940

00:45:20,010 --> 00:45:18,820

no no Richard Saunders would know the

941

00:45:23,070 --> 00:45:20,020

names there had been some things on

942

00:45:25,380 --> 00:45:23,080

Wi-Fi the ABCs done so so was any of the

943

00:45:29,579 --> 00:45:25,390

show much use as far as a science sugar

944

00:45:32,670 --> 00:45:29,589

I have to say I haven't watched you know

945

00:45:34,890 --> 00:45:32,680

a fair amount of the show I I don't

946

00:45:36,450 --> 00:45:34,900

inherently have a but so in case the

947

00:45:37,589 --> 00:45:36,460

listeners aren't weird with the

948

00:45:38,970 --> 00:45:37,599

listeners be aware of the show that

949

00:45:40,440 --> 00:45:38,980

we're talking about they get it up that

950

00:45:41,700 --> 00:45:40,450

the the name of the SBS show that we're

951

00:45:43,980 --> 00:45:41,710

talking about the one the bit spoon

952

00:45:47,099 --> 00:45:43,990

award is called it is medicine or myth

953

00:45:49,910 --> 00:45:47,109

which was which aired this year it's an

954

00:45:53,599 --> 00:45:49,920

eight part series and a panel of judges

955

00:45:56,640 --> 00:45:53,609

choose amongst a range of home remedies

956

00:45:59,579 --> 00:45:56,650

and then whichever one they think has

957

00:46:02,400 --> 00:45:59,589

some potential to be useful for for

958

00:46:04,859 --> 00:46:02,410

humans or humanity then is subjected to

959

00:46:06,210 --> 00:46:04,869

a trial of someone you mentioned I was

960

00:46:09,510 --> 00:46:06,220

thinking how are they going to get that

961

00:46:13,050 --> 00:46:09,520

passed the ethics committee is a was at

962

00:46:14,280 --> 00:46:13,060

a charcoal charcoal holders for poor

963

00:46:16,260 --> 00:46:14,290

funnel-web spider bytez

964

00:46:18,690 --> 00:46:16,270

which is a pretty severe poisonous bite

965

00:46:20,880 --> 00:46:18,700

so you'd be testing it on animals or

966

00:46:24,180 --> 00:46:20,890

something actually it was actually the

967

00:46:26,940 --> 00:46:24,190

the person who was promoting this enough

968

00:46:29,800 --> 00:46:26,950

is the naturopath Barbra O'Neill who has

969

00:46:33,590 --> 00:46:29,810

recently been banned by the hoc

970

00:46:34,700 --> 00:46:33,600

but the you know the claim was that she

971

00:46:37,010 --> 00:46:34,710

claimed that her daughter had been

972

00:46:40,130 --> 00:46:37,020

written by a funnel-web spider six times

973

00:46:41,660 --> 00:46:40,140

and for start you got to stop her

974

00:46:44,150 --> 00:46:41,670

playing around the Guardian where she's

975

00:46:47,630 --> 00:46:44,160

doing that well exactly and she claimed

976

00:46:50,600 --> 00:46:47,640

that she she applied this this charcoal

977

00:46:51,860 --> 00:46:50,610

poultice to the bite because you know

978

00:46:53,660 --> 00:46:51,870

they didn't have a car and they couldn't

979

00:46:55,070 --> 00:46:53,670

get to a hospital and so on and that her

980

00:46:58,700 --> 00:46:55,080

daughter was absolutely fine and had no

981

00:47:00,380 --> 00:46:58,710

no problems now you know by my

982

00:47:02,150 --> 00:47:00,390

scientific mind when someone makes a

983

00:47:03,980 --> 00:47:02,160

claim like that is to say well first of

984

00:47:07,760 --> 00:47:03,990

all was it really a funnel-web spider

985

00:47:09,920 --> 00:47:07,770

was it six times was it six times and

986

00:47:12,200 --> 00:47:09,930

various other questions of you know what

987

00:47:15,380 --> 00:47:12,210

what really happened here but suppose I

988

00:47:17,360 --> 00:47:15,390

say look at the people presented were of

989

00:47:19,910 --> 00:47:17,370

course of dubious but nonetheless I

990

00:47:23,030 --> 00:47:19,920

think that as scientists our job is to

991

00:47:25,280 --> 00:47:23,040

Orson scientific minded people our job

992

00:47:26,930 --> 00:47:25,290

is to actually test these claims and if

993

00:47:28,640 --> 00:47:26,940

something does have plausibility and

994

00:47:30,800 --> 00:47:28,650

some of these things could I have no

995

00:47:34,340 --> 00:47:30,810

problem with them being tested the

996

00:47:36,530 --> 00:47:34,350

reason we awarded the spoon to to

997

00:47:39,260 --> 00:47:36,540

medicine or MIT this year particularly

998

00:47:40,970 --> 00:47:39,270

the producers of the show is that the

999

00:47:43,880 --> 00:47:40,980

manner in which the products were tested

1000

00:47:45,380 --> 00:47:43,890

really did not conform to what would -

1001
00:47:48,680 --> 00:47:45,390
what a scientist would consider to be a

1002
00:47:50,330 --> 00:47:48,690
rigorous methodology so ways that would

1003
00:47:51,920 --> 00:47:50,340
reduce bias that would enable us to

1004
00:47:53,720 --> 00:47:51,930
really know whether the reason people

1005
00:47:55,040 --> 00:47:53,730
were gaining a benefit from the

1006
00:47:56,900 --> 00:47:55,050
particular treatment was because the

1007
00:48:01,130 --> 00:47:56,910
treatment itself was working whether it

1008
00:48:03,740 --> 00:48:01,140
was just for SIBO so it really was more

1009
00:48:05,390 --> 00:48:03,750
good TV rather than rigorous science so

1010
00:48:06,950 --> 00:48:05,400
do you think they'll reply to getting

1011
00:48:08,510 --> 00:48:06,960
the award at all what do the recipients

1012
00:48:10,130 --> 00:48:08,520
normally do that they normally snap back

1013
00:48:13,400 --> 00:48:10,140

they get snarky on Twitter well it

1014

00:48:14,990 --> 00:48:13,410

really depends on the recipient you know

1015

00:48:17,360 --> 00:48:15,000

we've had some people who have become

1016

00:48:19,340 --> 00:48:17,370

very naughty and and sort of feel very

1017

00:48:20,180 --> 00:48:19,350

slighted by having been awarded the

1018

00:48:22,599 --> 00:48:20,190

spoon

1019

00:48:25,039 --> 00:48:22,609

so people wear it as a badge of pride

1020

00:48:28,069 --> 00:48:25,049

but generally they tend to go fairly

1021

00:48:29,539 --> 00:48:28,079

quiet and you know just try and let it

1022

00:48:31,549 --> 00:48:29,549

sail under the radar

1023

00:48:33,799 --> 00:48:31,559

let's talk skeptical fashions here

1024

00:48:36,500 --> 00:48:33,809

tonight you're owing a wonderful sort of

1025

00:48:41,180 --> 00:48:36,510

a short evening dress in a sort of a

1026

00:48:43,730 --> 00:48:41,190

royal blue color electric blue yeah I'm

1027

00:48:46,160 --> 00:48:43,740

a big fan of it there yeah thank you but

1028

00:48:47,630 --> 00:48:46,170

what colors are wear it did there's a it

1029

00:48:49,789 --> 00:48:47,640

is Melbourne so bright colors are

1030

00:48:52,609 --> 00:48:49,799

normally the go we have a lot of people

1031

00:48:54,799 --> 00:48:52,619

in fashionable Melbourne black we have a

1032

00:48:55,370 --> 00:48:54,809

few interesting at sooner Aceh doctor

1033

00:48:57,680 --> 00:48:55,380

Sieracki

1034

00:49:02,980 --> 00:48:57,690

always looks fabulous she's wearing a

1035

00:49:06,140 --> 00:49:02,990

lovely green ensemble I know I know and

1036

00:49:09,410 --> 00:49:06,150

we have a life pink actually I see a lot

1037

00:49:11,299 --> 00:49:09,420

of pink shirts it seems to be the colour

1038

00:49:12,770 --> 00:49:11,309

for the men tonight look I think you'll

1039

00:49:14,120 --> 00:49:12,780

find that salmon and a lot of people

1040

00:49:15,770 --> 00:49:14,130

have got the idea from what Leonard did

1041

00:49:17,599 --> 00:49:15,780

more used to wear in the insert job

1042

00:49:18,920 --> 00:49:17,609

series that kind of makes a lot of sense

1043

00:49:20,990 --> 00:49:18,930

that people here would be inspired by

1044

00:49:22,910 --> 00:49:21,000

Leonard Nimoy oh yeah like I said it

1045

00:49:25,309 --> 00:49:22,920

Mary Chapman and a new more New Year as

1046

00:49:27,289 --> 00:49:25,319

I like to say also people listen to the

1047

00:49:29,329 --> 00:49:27,299

in research off podcast where they take

1048

00:49:31,519 --> 00:49:29,339

an episode of insert job from the 70s

1049

00:49:35,450 --> 00:49:31,529

each week and then actually look into

1050

00:49:37,010 --> 00:49:35,460

it's great show oh yeah did you ever

1051
00:49:41,750 --> 00:49:37,020
watch the insert off show and it got

1052
00:49:44,180 --> 00:49:41,760
repeated in Australia in the early 90s I

1053
00:49:45,620 --> 00:49:44,190
had a TV from a very young age and I

1054
00:49:47,240 --> 00:49:45,630
don't know how I missed that one if you

1055
00:49:49,609 --> 00:49:47,250
should be something after news channel 7

1056
00:49:51,700 --> 00:49:49,619
I think it was but yeah and we're

1057
00:49:53,980 --> 00:49:51,710
watching the Curiosity chair

1058
00:49:55,390 --> 00:49:53,990
yeah well people call it the door and a

1059
00:49:57,180 --> 00:49:55,400
paranormal television because letting

1060
00:49:58,359 --> 00:49:57,190
them learn chemical killer beez

1061
00:50:00,579 --> 00:49:58,369
earthquakes

1062
00:50:02,410 --> 00:50:00,589
plants that can talk it could be great

1063
00:50:04,690 --> 00:50:02,420

movie well one of the the plants that

1064

00:50:07,359 --> 00:50:04,700

can talk one was a 70s one and they want

1065

00:50:09,520 --> 00:50:07,369

to figure out well we'll do pain in a

1066

00:50:12,490 --> 00:50:09,530

person see if the and they got a scalpel

1067

00:50:15,010 --> 00:50:12,500

and just cut someone's thumb you know no

1068

00:50:16,420 --> 00:50:15,020

alcohol no nothing just and good the way

1069

00:50:17,859 --> 00:50:16,430

the scalpel came from I don't know like

1070

00:50:22,299 --> 00:50:17,869

something you wouldn't get past an

1071

00:50:23,559 --> 00:50:22,309

ethics committee and where are you work

1072

00:50:26,079 --> 00:50:23,569

at the moment are you doing your in

1073

00:50:29,109 --> 00:50:26,089

research still so I do two things I am a

1074

00:50:33,099 --> 00:50:29,119

senior research nurse at Peter Mack and

1075

00:50:36,040 --> 00:50:33,109

I look after lung cancer bowel cancer

1076

00:50:38,470 --> 00:50:36,050

and palliative care trials and I also

1077

00:50:39,460 --> 00:50:38,480

teach bioethics to medical students at

1078

00:50:41,410 --> 00:50:39,470

Monash University

1079

00:50:42,460 --> 00:50:41,420

now what's one of your mind games you

1080

00:50:43,930 --> 00:50:42,470

might play with them when you're

1081

00:50:45,460 --> 00:50:43,940

teaching them ethics like what what is a

1082

00:50:47,309 --> 00:50:45,470

quandary you might give them and then

1083

00:50:50,680 --> 00:50:47,319

have a chat to them about later you know

1084

00:50:52,569 --> 00:50:50,690

about teaching ethics is getting people

1085

00:50:55,480 --> 00:50:52,579

to understand that there are no right

1086

00:50:57,309 --> 00:50:55,490

answers but if you believe really

1087

00:50:59,680 --> 00:50:57,319

strongly that the way you're going to do

1088

00:51:02,079 --> 00:50:59,690

something is the right way you better

1089

00:51:04,930 --> 00:51:02,089

have a good argument for why you think

1090

00:51:07,089 --> 00:51:04,940

you can justify it so if you've got a

1091

00:51:09,430 --> 00:51:07,099

bit of a trolley problem going on and

1092

00:51:12,309 --> 00:51:09,440

you think it would be best to you know

1093

00:51:15,520 --> 00:51:12,319

give the kidney to you know a particular

1094

00:51:17,920 --> 00:51:15,530

person or or not you just need to be

1095

00:51:20,049 --> 00:51:17,930

able to tell us why you think that

1096

00:51:21,160 --> 00:51:20,059

look look just being the devil's

1097

00:51:22,750 --> 00:51:21,170

advocate he I'm sure there would have

1098

00:51:24,069 --> 00:51:22,760

been a couple of third reich scientists

1099

00:51:26,049 --> 00:51:24,079

have could have given you very good

1100

00:51:28,029 --> 00:51:26,059

explanations as to why they were doing

1101

00:51:30,279 --> 00:51:28,039

this stuff using the now discredited

1102

00:51:31,720 --> 00:51:30,289

science of eugenics but back then they

1103

00:51:33,789 --> 00:51:31,730

will to go i'm up science backs me up

1104

00:51:35,769 --> 00:51:33,799

oh look absolutely and in fact teaching

1105

00:51:38,109 --> 00:51:35,779

research ethics and talking about nazi

1106

00:51:40,779 --> 00:51:38,119

research is a topic that I really find

1107

00:51:43,089 --> 00:51:40,789

important to talk to students about one

1108

00:51:45,700 --> 00:51:43,099

of the things that is a common problem

1109

00:51:48,069 --> 00:51:45,710

that we have is whether or not we can

1110

00:51:49,359 --> 00:51:48,079

actually use research that but not send

1111

00:51:51,279 --> 00:51:49,369

was going to ask you get to the high

1112

00:51:53,200 --> 00:51:51,289

altitude research testing that they did

1113

00:51:56,109 --> 00:51:53,210

in in the camps where people actually

1114

00:51:57,490 --> 00:51:56,119

died now is the science actually usable

1115

00:51:58,990 --> 00:51:57,500

here because I remember calculus you

1116

00:52:00,430 --> 00:51:59,000

said a lot of it to be junk science they

1117

00:52:03,000 --> 00:52:00,440

weren't writing it down properly but is

1118

00:52:05,980 --> 00:52:03,010

that stuff useful well actually you know

1119

00:52:08,079 --> 00:52:05,990

it's it's actually questionable how

1120

00:52:09,880 --> 00:52:08,089

useful some of that Nazi research was

1121

00:52:11,410 --> 00:52:09,890

because you know a lot of people have

1122

00:52:13,299 --> 00:52:11,420

this mindset that first of all there's a

1123

00:52:15,940 --> 00:52:13,309

couple of aspects there first of all you

1124

00:52:17,620 --> 00:52:15,950

kind of got to think well can we even if

1125

00:52:20,289 --> 00:52:17,630

it was even if it was really really high

1126
00:52:21,579 --> 00:52:20,299
quality research in victory can we use

1127
00:52:23,620 --> 00:52:21,589
that research and there is a

1128
00:52:25,950 --> 00:52:23,630
long-standing ethical debate around

1129
00:52:28,589 --> 00:52:25,960
whether we are justified in using

1130
00:52:31,000 --> 00:52:28,599
research that came about because of

1131
00:52:34,269 --> 00:52:31,010
crime as effectively crimes against

1132
00:52:36,220 --> 00:52:34,279
humanity once I was George you're up

1133
00:52:38,890 --> 00:52:36,230
about this and he came down that at

1134
00:52:40,569 --> 00:52:38,900
least if it is used those people that

1135
00:52:42,400 --> 00:52:40,579
died under horrible circumstances their

1136
00:52:44,650 --> 00:52:42,410
lives haven't been wasted that's what he

1137
00:52:47,109 --> 00:52:44,660
said there's a common argument which I

1138
00:52:50,160 --> 00:52:47,119

have at times being swayed by that these

1139

00:52:52,960 --> 00:52:50,170

days I read an interesting paper by a

1140

00:52:55,210 --> 00:52:52,970

bioethicist whose name escapes me but

1141

00:52:58,839 --> 00:52:55,220

essentially his argument was that there

1142

00:53:02,200 --> 00:52:58,849

are certain there are certain crimes and

1143

00:53:03,140 --> 00:53:02,210

certain certain what I guess we could

1144

00:53:05,200 --> 00:53:03,150

call

1145

00:53:09,140 --> 00:53:05,210

things that have been done to humanity

1146

00:53:11,480 --> 00:53:09,150

that meet the category of being so so

1147

00:53:13,370 --> 00:53:11,490

diabolically the word of domination or

1148

00:53:15,559 --> 00:53:13,380

not an abomination that is exactly the

1149

00:53:18,470 --> 00:53:15,569

word he used they they are such an

1150

00:53:20,390 --> 00:53:18,480

abomination that not that that in order

1151

00:53:23,059 --> 00:53:20,400

for that research to be to the use of

1152

00:53:24,829 --> 00:53:23,069

that research to be justified it the

1153

00:53:27,019 --> 00:53:24,839

benefit you would get from using that

1154

00:53:29,329 --> 00:53:27,029

research would have to outweigh the

1155

00:53:32,870 --> 00:53:29,339

abomination that was done by conducting

1156

00:53:34,190 --> 00:53:32,880

the research so that is an ethical

1157

00:53:37,039 --> 00:53:34,200

conundrum because then you got to do the

1158

00:53:39,470 --> 00:53:37,049

scales and yeah that's what we do in

1159

00:53:42,410 --> 00:53:39,480

ethics is weighing up our benefits and

1160

00:53:44,809 --> 00:53:42,420

risks and so on but then the other the

1161

00:53:47,180 --> 00:53:44,819

other argument that is made around using

1162

00:53:49,730 --> 00:53:47,190

this research is people often say well

1163

00:53:51,710 --> 00:53:49,740

the Nazis were so rigorous they were so

1164

00:53:54,470 --> 00:53:51,720

ordered and methodological and they kept

1165

00:53:57,140 --> 00:53:54,480

such and amira good notes but in fact

1166

00:53:59,029 --> 00:53:57,150

what we what we have found one that

1167

00:54:01,039 --> 00:53:59,039

would not me personally other people

1168

00:54:02,930 --> 00:54:01,049

who've investigated this is that in fact

1169

00:54:06,259 --> 00:54:02,940

the quality of their research was

1170

00:54:08,150 --> 00:54:06,269

actually not very good so while many

1171

00:54:09,890 --> 00:54:08,160

would say oh you know we should utilize

1172

00:54:11,180 --> 00:54:09,900

this research where you personally we

1173

00:54:12,620 --> 00:54:11,190

could never conduct a lot of these

1174

00:54:14,299 --> 00:54:12,630

experiments today because no ethics

1175

00:54:17,109 --> 00:54:14,309

committee would ever allow it but in

1176

00:54:20,839 --> 00:54:17,119

fact we really can't rely on that data

1177

00:54:23,450 --> 00:54:20,849

as as being a high enough quality that

1178

00:54:25,910 --> 00:54:23,460

it that we could justify using it now I

1179

00:54:27,739 --> 00:54:25,920

find it a really fascinating argument

1180

00:54:29,630 --> 00:54:27,749

and I think you know we always we'd

1181

00:54:31,430 --> 00:54:29,640

always talk about the Nazi research but

1182

00:54:34,489 --> 00:54:31,440

in fact there was research conducted by

1183

00:54:36,410 --> 00:54:34,499

the Japanese by the American Manchuria

1184

00:54:39,140 --> 00:54:36,420

yes you know if we think about the

1185

00:54:41,269 --> 00:54:39,150

Tuskegee experiments that the Americans

1186

00:54:43,009 --> 00:54:41,279

performed on on African Americans

1187

00:54:45,710 --> 00:54:43,019

without their knowledge that was

1188

00:54:48,559 --> 00:54:45,720

properly done science wasn't actually

1189

00:54:51,079 --> 00:54:48,569

the tusky research was actually you know

1190

00:54:52,609 --> 00:54:51,089

yes it was properly done but an if

1191

00:54:54,890 --> 00:54:52,619

listeners aren't familiar I highly

1192

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

recommend looking it up essentially the

1193

00:54:58,160 --> 00:54:56,759

the Department of Health in Farkle

1194

00:54:59,509 --> 00:54:58,170

correctly in America were interested in

1195

00:55:01,230 --> 00:54:59,519

looking at the natural course of

1196

00:55:03,390 --> 00:55:01,240

syphilis infections

1197

00:55:06,180 --> 00:55:03,400

and they they followed a group of

1198

00:55:07,680 --> 00:55:06,190

african-american men to see how syphilis

1199

00:55:09,420 --> 00:55:07,690

essentially the natural course of

1200

00:55:11,220 --> 00:55:09,430

syphilis in these men so they basically

1201

00:55:13,080 --> 00:55:11,230

didn't treat them and just watched out

1202

00:55:15,120 --> 00:55:13,090

well well the thing was when they were

1203

00:55:17,840 --> 00:55:15,130

first diagnosed when they first sort of

1204

00:55:20,370 --> 00:55:17,850

recruited these men there wasn't a

1205

00:55:21,930 --> 00:55:20,380

treatment available at the time but

1206

00:55:23,700 --> 00:55:21,940

during the course of conducting the

1207

00:55:25,980 --> 00:55:23,710

experiment a treatment for syphilis

1208

00:55:28,890 --> 00:55:25,990

became available and these researchers

1209

00:55:30,780 --> 00:55:28,900

never told the men who were involved and

1210

00:55:32,760 --> 00:55:30,790

they they so they didn't offer them a

1211

00:55:35,280 --> 00:55:32,770

treatment that was now available to them

1212

00:55:37,110 --> 00:55:35,290

I know that Bill Clinton apologized for

1213

00:55:39,540 --> 00:55:37,120

this whether reparations given to them

1214

00:55:41,900 --> 00:55:39,550

I'm actually I'm actually not sure about

1215

00:55:44,190 --> 00:55:41,910

reparations but what I do know is that

1216

00:55:47,100 --> 00:55:44,200

african-americans are because of things

1217

00:55:49,410 --> 00:55:47,110

like the Tuskegee experiments and also

1218

00:55:52,590 --> 00:55:49,420

if you look at the story of Henrietta

1219

00:55:55,080 --> 00:55:52,600

Lacks and the way her body was used for

1220

00:55:56,940 --> 00:55:55,090

science without her consent the African

1221

00:55:59,310 --> 00:55:56,950

American community quite justifiably

1222

00:56:00,900 --> 00:55:59,320

have had a long-standing distrust of the

1223

00:56:03,780 --> 00:56:00,910

medical community and of scientists

1224

00:56:06,150 --> 00:56:03,790

which unfortunately you know is another

1225

00:56:07,770 --> 00:56:06,160

factor that plays into why there are

1226
00:56:09,300 --> 00:56:07,780
poor health outcomes because if your

1227
00:56:11,160 --> 00:56:09,310
community doesn't trust the medical

1228
00:56:13,020 --> 00:56:11,170
profession you're going to be less

1229
00:56:14,610 --> 00:56:13,030
likely to actually seek out medical care

1230
00:56:17,010 --> 00:56:14,620
I never mind the fact the medical care

1231
00:56:19,320 --> 00:56:17,020
in America is horrendously expensive but

1232
00:56:21,660 --> 00:56:19,330
I think we the the research community

1233
00:56:24,870 --> 00:56:21,670
has a real responsibility to rebuild

1234
00:56:26,430 --> 00:56:24,880
that trust particularly you know within

1235
00:56:29,040 --> 00:56:26,440
the Australian community our indigenous

1236
00:56:33,180 --> 00:56:29,050
population that have also been affected

1237
00:56:34,230 --> 00:56:33,190
by these kinds of abuses of power and of

1238
00:56:36,360 --> 00:56:34,240

trust

1239

00:56:41,520 --> 00:56:36,370

so it's something is you can hear it so

1240

00:56:43,200 --> 00:56:41,530

I feel very and jo21 why not join this

1241

00:56:45,510 --> 00:56:43,210

up is there a website where these things

1242

00:56:47,250 --> 00:56:45,520

is discussed and the all the things are

1243

00:56:48,600 --> 00:56:47,260

mentioned so we can school ourselves

1244

00:56:52,710 --> 00:56:48,610

about is that one you could recommend to

1245

00:56:54,090 --> 00:56:52,720

it off the top of my head I think that I

1246

00:56:57,180 --> 00:56:54,100

can't think of anything specifically

1247

00:56:58,380 --> 00:56:57,190

website wise but but I highly recommend

1248

00:57:01,080 --> 00:56:58,390

reading The Immortal Life of Henrietta

1249

00:57:03,250 --> 00:57:01,090

Lacks by Rebecca Skloot which is one of

1250

00:57:06,740 --> 00:57:03,260

the most outstanding

1251
00:57:09,440 --> 00:57:06,750
representations and and and and that's

1252
00:57:13,250 --> 00:57:09,450
all about her certificate loss of

1253
00:57:14,510 --> 00:57:13,260
vehicles actually funnily enough I was

1254
00:57:16,130 --> 00:57:14,520
talking to some of the s to you the

1255
00:57:17,900 --> 00:57:16,140
other day skeptics guide to the universe

1256
00:57:19,040 --> 00:57:17,910
and we were we were laughing about the

1257
00:57:20,870 --> 00:57:19,050
difference between how Americans and

1258
00:57:24,830 --> 00:57:20,880
Australians pronounce serve I call for

1259
00:57:26,360 --> 00:57:24,840
me it's cervical yeah SSO it's all about

1260
00:57:28,370 --> 00:57:26,370
that so dig into that and have a look

1261
00:57:30,050 --> 00:57:28,380
because you and you and you'll think

1262
00:57:31,130 --> 00:57:30,060
going into it yeah I know this is what

1263
00:57:34,310 --> 00:57:31,140

I'm going to think but then when you

1264

00:57:36,140 --> 00:57:34,320

read it hmm absolutely absolutely highly

1265

00:57:38,840 --> 00:57:36,150

recommended it'll also make you realize

1266

00:57:41,030 --> 00:57:38,850

how much of the medical care that we now

1267

00:57:44,300 --> 00:57:41,040

benefit from is thanks to Henrietta

1268

00:57:45,770 --> 00:57:44,310

Lacks and her HeLa cells which century

1269

00:58:06,310 --> 00:57:45,780

is responsible for much of Medical

1270

00:58:14,180 --> 00:58:08,660

thank you for listening to the skeptic

1271

00:58:15,950 --> 00:58:14,190

sound and thank you to the crowd here in

1272

00:58:19,460 --> 00:58:15,960

Portland Oregon they were so impressed

1273

00:58:31,190 --> 00:58:19,470

by my talk I can't tell you that they

1274

00:58:33,560 --> 00:58:31,200

don't want me to leave the stage well

1275

00:58:36,920 --> 00:58:33,570

next week's show lots more from Maynard

1276

00:58:39,260 --> 00:58:36,930

and skeptic on 2019 and some other

1277

00:58:41,000 --> 00:58:39,270

interesting things but for now signing

1278

00:58:56,600 --> 00:58:41,010

off from Portland Oregon this is Richard

1279

00:58:59,420 --> 00:58:56,610

Saunders you've been listening to the

1280

00:59:06,320 --> 00:58:59,430

skeptic zone podcast please visit our

1281

00:59:08,870 --> 00:59:06,330

website at wwlp.com tax and to access

1282

00:59:12,470 --> 00:59:08,880

the back catalog of episodes going back

1283

00:59:16,130 --> 00:59:12,480

to 2008 you can follow the skeptic zone

1284

00:59:18,530 --> 00:59:16,140

podcast on twitter at skeptic zone visit

1285

00:59:19,390 --> 00:59:18,540

our facebook page or leave a review on

1286

00:59:22,100 --> 00:59:19,400

itunes

1287

00:59:25,460 --> 00:59:22,110

you can also support the skeptic zone

1288

00:59:28,880 --> 00:59:25,470

via patreon or PayPal the skeptic zone

1289

00:59:30,560 --> 00:59:28,890

podcast is an independent production the

1290

00:59:32,720 --> 00:59:30,570

views and opinions expressed on the

1291

00:59:35,060 --> 00:59:32,730

skeptic zone are not necessarily those

1292

00:59:36,860 --> 00:59:35,070

of Australian skeptics or any other

1293

00:59:45,620 --> 00:59:36,870

skeptical organization

1294

00:59:50,039 --> 00:59:48,299

so if you'll indulge me for one second I

1295

00:59:51,900 --> 00:59:50,049

will do a live introduction to my own

1296

00:59:54,569 --> 00:59:51,910

podcast in fact Brian Dunning and I were