

1
00:00:06,139 --> 00:00:13,689
welcome to the skeptic zone the podcast

2
00:00:09,109 --> 00:00:13,689
from Australia for science and reason

3
00:00:22,190 --> 00:00:29,010
hello and welcome to the skeptics are an

4
00:00:24,809 --> 00:00:31,679
episode number 245 for the 30th of jun

5
00:00:29,010 --> 00:00:34,350
2013 Richard Saunders here with you from

6
00:00:31,679 --> 00:00:37,820
Sydney Australia where they're blue

7
00:00:34,350 --> 00:00:40,800
skies have returned if only for a moment

8
00:00:37,820 --> 00:00:42,420
and the ground is soggy and soaked and

9
00:00:40,799 --> 00:00:43,890
the waters have been splashing and

10
00:00:42,420 --> 00:00:46,500
everyone's been building arcs and

11
00:00:43,890 --> 00:00:49,320
collecting their animals two-by-two but

12
00:00:46,500 --> 00:00:52,019
I think it might find up soon coming up

13
00:00:49,320 --> 00:00:54,270
on this week's show dr. Richie reports

14
00:00:52,020 --> 00:00:57,630
dr. Reggie reports an interview she

15
00:00:54,270 --> 00:00:59,130
conducted at the recent ish QED

16
00:00:57,630 --> 00:01:02,010
conference in Manchester and what a

17
00:00:59,130 --> 00:01:04,280
great time we had their doctor 'he

18
00:01:02,009 --> 00:01:07,799
interviews row shapiro about her book

19
00:01:04,280 --> 00:01:11,849
suckers how alternative medicine makes

20
00:01:07,799 --> 00:01:13,920
fools of us all of us all away hmm that

21
00:01:11,849 --> 00:01:15,959
interview coming up with rose shapiro at

22
00:01:13,920 --> 00:01:17,519
the top of the show following that it's

23
00:01:15,959 --> 00:01:18,959
a week in science another week in

24
00:01:17,519 --> 00:01:20,689
science with our good friend dr. Paul

25
00:01:18,959 --> 00:01:23,849
Willis from the Royal Institution of

26
00:01:20,689 --> 00:01:25,409
Australia wow what a great job they do i

27
00:01:23,849 --> 00:01:27,919
really enjoy a week in science and

28
00:01:25,409 --> 00:01:30,118
really um it really reminds us all that

29

00:01:27,920 --> 00:01:33,118
science is ongoing and the news out

30
00:01:30,118 --> 00:01:36,000
there is just well never-ending good

31
00:01:33,118 --> 00:01:38,879
stuff following that we're going to play

32
00:01:36,000 --> 00:01:42,959
a clip from federal parliament how about

33
00:01:38,879 --> 00:01:45,239
that greens senator dr. Richard Di

34
00:01:42,959 --> 00:01:47,700
Natale made a speech in the last week

35
00:01:45,239 --> 00:01:50,159
concerning the Australian vaccination

36
00:01:47,700 --> 00:01:52,409
network now I had a letter not so long

37
00:01:50,159 --> 00:01:54,750
ago saying all the skeptics and I enjoy

38
00:01:52,409 --> 00:01:56,789
the skeptic zone but you know what I'm

39
00:01:54,750 --> 00:02:00,030
getting so sick of hearing about the the

40
00:01:56,789 --> 00:02:02,129
vaccination issues well it's important

41
00:02:00,030 --> 00:02:05,159
issues so we're going to keep

42
00:02:02,129 --> 00:02:07,500
broadcasting news about it and this is

43
00:02:05,159 --> 00:02:10,139

particularly significant this is a

44

00:02:07,500 --> 00:02:12,300
speech in our federal parliament the

45

00:02:10,139 --> 00:02:14,848
Parliament of Australia concerning the

46

00:02:12,300 --> 00:02:17,069
Australian vaccination at work I think

47

00:02:14,848 --> 00:02:19,439
you'll find it very interesting and then

48

00:02:17,068 --> 00:02:21,568
to round off the show Maynard spooky

49

00:02:19,439 --> 00:02:25,370
action may not speak to jonathan roberts

50

00:02:21,568 --> 00:02:30,539
from the CSIRO about robot science

51

00:02:25,370 --> 00:02:32,370
robots and laser imaging it's straying a

52

00:02:30,539 --> 00:02:34,280
little bit from skepticism I'll grant

53

00:02:32,370 --> 00:02:37,520
you that but wow what an interesting

54

00:02:34,280 --> 00:02:39,770
and fascinating interview it is robots

55

00:02:37,520 --> 00:02:42,500
and layers of vision well worth a listen

56

00:02:39,770 --> 00:02:44,990
and to be honest folks where would we be

57

00:02:42,500 --> 00:02:48,590
without Maynard any spooky action I

58
00:02:44,990 --> 00:02:50,450
wonder and I'm so so sorry that Maynard

59
00:02:48,590 --> 00:02:52,509
won't be joining us this year at the

60
00:02:50,449 --> 00:02:56,149
amazing meeting at tab because I know

61
00:02:52,509 --> 00:02:58,729
what a great time he had last year

62
00:02:56,150 --> 00:03:01,520
running around like crazy who was like

63
00:02:58,729 --> 00:03:03,649
the golden flash he was wearing a golden

64
00:03:01,520 --> 00:03:05,830
blazer or a code of some description

65
00:03:03,650 --> 00:03:08,629
like you'd see in a las vegas lounge

66
00:03:05,830 --> 00:03:10,010
interviewing everybody and anybody and

67
00:03:08,629 --> 00:03:12,280
running outside and interviewing the

68
00:03:10,009 --> 00:03:15,049
dogs and the cats and he was just

69
00:03:12,280 --> 00:03:17,719
incredible and skeptics and listeners

70
00:03:15,050 --> 00:03:19,819
will will remember his interviews from

71
00:03:17,719 --> 00:03:20,989
the amazing meeting last year went for

72
00:03:19,818 --> 00:03:23,329
months and months it was just fantastic

73
00:03:20,989 --> 00:03:24,920
so may not I'm sorry you can't be with

74
00:03:23,330 --> 00:03:27,110
us this year at the amazing meeting

75
00:03:24,919 --> 00:03:28,458
we're gonna have a great time we'll try

76
00:03:27,110 --> 00:03:30,230
and have a great time without Maynard

77
00:03:28,459 --> 00:03:32,509
I'm looking forward to giving my talk

78
00:03:30,229 --> 00:03:35,179
looking into the mind of the true

79
00:03:32,509 --> 00:03:38,179
believer or I'll discussing psychics and

80
00:03:35,180 --> 00:03:39,860
power bands and water diviners and

81
00:03:38,180 --> 00:03:42,010
firewalkers and things like that and

82
00:03:39,860 --> 00:03:45,620
I'll be in the big hall just outside the

83
00:03:42,009 --> 00:03:47,439
main auditorium doing water divining

84
00:03:45,620 --> 00:03:51,259
demonstrations Power Balance

85
00:03:47,439 --> 00:03:53,359
demonstrations and making more agami I

86

00:03:51,259 --> 00:03:55,519
hope if you're coming to the amazing

87
00:03:53,360 --> 00:03:57,560
meeting I do hope you'll come by and say

88
00:03:55,519 --> 00:04:00,709
hello I don't think I'll be hard to find

89
00:03:57,560 --> 00:04:03,709
and speaking of skeptical conventions

90
00:04:00,709 --> 00:04:06,379
big news tickets for the Australian

91
00:04:03,709 --> 00:04:09,769
skeptics national convention go on sale

92
00:04:06,379 --> 00:04:11,599
from July the first which is well

93
00:04:09,769 --> 00:04:15,469
tomorrow or if you're hearing this is

94
00:04:11,599 --> 00:04:17,659
probably today or yesterday or you

95
00:04:15,469 --> 00:04:19,879
better check this out tickets for the

96
00:04:17,660 --> 00:04:21,289
Australian skeptics national convention

97
00:04:19,879 --> 00:04:24,199
to be held in camera in November are

98
00:04:21,288 --> 00:04:25,909
available from July the first says the

99
00:04:24,199 --> 00:04:27,949
website the convention will be held at

100
00:04:25,910 --> 00:04:29,720

the CSIRO discovery center in Canberra

101

00:04:27,949 --> 00:04:32,629

from the 20 seconds and 24th and

102

00:04:29,720 --> 00:04:35,990

November the theme is landing on the

103

00:04:32,629 --> 00:04:39,139

truth science skepticism and conspiracy

104

00:04:35,990 --> 00:04:41,240

theories this convention is timed to

105

00:04:39,139 --> 00:04:44,658

coincide with the 50th anniversary of

106

00:04:41,240 --> 00:04:46,879

the assassination of JFK not to mention

107

00:04:44,658 --> 00:04:48,230

the first Doctor Who program the

108

00:04:46,879 --> 00:04:50,719

featured internationals

109

00:04:48,230 --> 00:04:52,580

speaker is Professor Chris French head

110

00:04:50,720 --> 00:04:55,130

of the anomalistic psychology research

111

00:04:52,579 --> 00:04:57,649

unit at the psychology department of

112

00:04:55,129 --> 00:05:01,189

Goldsmiths University of London seats

113

00:04:57,649 --> 00:05:03,379

are limited so get your tickets as

114

00:05:01,189 --> 00:05:07,639

quickly as you can if you want to get

115
00:05:03,379 --> 00:05:12,829
your tickets don't hesitate head for www

116
00:05:07,639 --> 00:05:14,959
a Chanel skeptics convention org now you

117
00:05:12,829 --> 00:05:18,169
are national skeptics convention org

118
00:05:14,959 --> 00:05:19,639
news about the agenda the venue the

119
00:05:18,170 --> 00:05:21,470
speaker's the accommodation dinner

120
00:05:19,639 --> 00:05:22,819
you're looking forward to the dinner

121
00:05:21,470 --> 00:05:24,440
we're going to hand out the bent spoon

122
00:05:22,819 --> 00:05:27,439
award that should be fun last year went

123
00:05:24,439 --> 00:05:29,509
to went to the homeopath is and other

124
00:05:27,439 --> 00:05:31,730
information national skeptics convention

125
00:05:29,509 --> 00:05:33,769
dog i'll be there giving a talk looking

126
00:05:31,730 --> 00:05:37,189
forward to that lots of fine people and

127
00:05:33,769 --> 00:05:40,269
good times and just before we kick off

128
00:05:37,189 --> 00:05:43,339
the show good news well good news for me

129
00:05:40,269 --> 00:05:45,709
very good news for me i'm finally over

130
00:05:43,339 --> 00:05:47,239
the rotten sinus infection i had thank

131
00:05:45,709 --> 00:05:50,959
you to all those people who wrote with

132
00:05:47,240 --> 00:05:52,069
the suggestions and just showing me

133
00:05:50,959 --> 00:05:54,169
their concern that was very touching

134
00:05:52,069 --> 00:05:56,509
thank you very much it's wonderful to be

135
00:05:54,170 --> 00:05:58,490
better again no folks I i hope you'll

136
00:05:56,509 --> 00:06:00,680
never get a sinus infection it's time

137
00:05:58,490 --> 00:06:02,449
for me to run downstairs reach into the

138
00:06:00,680 --> 00:06:04,129
freezer even though it's winter here

139
00:06:02,449 --> 00:06:07,089
Australian it's been cold and wet and

140
00:06:04,129 --> 00:06:09,889
miserable I think I'll have a nice um

141
00:06:07,089 --> 00:06:12,079
frozen yogurt yeah why not yeah they're

142
00:06:09,889 --> 00:06:15,610
very tasty well I'm doing that I hope

143

00:06:12,079 --> 00:06:15,609
you enjoy the skeptic zone

144
00:06:28,069 --> 00:06:37,080
now it's time for dr. Rachel reports

145
00:06:31,439 --> 00:06:39,719
with dr. Rachel Dunlop hi so we're here

146
00:06:37,079 --> 00:06:41,189
at QED with rose Shapiro hi rose hello

147
00:06:39,720 --> 00:06:43,740
how are you enjoying the conference I'm

148
00:06:41,189 --> 00:06:45,959
having a great time as fabulous good so

149
00:06:43,740 --> 00:06:47,668
you gave an interview yesterday about

150
00:06:45,959 --> 00:06:50,128
your book suckers how alternative

151
00:06:47,668 --> 00:06:51,658
medicine makes fools of us all but your

152
00:06:50,129 --> 00:06:53,580
background comes from journalism doesn't

153
00:06:51,658 --> 00:06:55,408
it from working in magazines yes that's

154
00:06:53,579 --> 00:06:57,418
right I've worked in the mainstream

155
00:06:55,408 --> 00:07:01,050
press for quite a long time particularly

156
00:06:57,418 --> 00:07:02,758
in women's magazines and also in the

157
00:07:01,050 --> 00:07:05,610

health trade press as a health writer

158

00:07:02,759 --> 00:07:08,158

and through that you came across ult med

159

00:07:05,610 --> 00:07:12,689

didn't you yes very much so in the in

160

00:07:08,158 --> 00:07:15,779

women's magazines mainly as in a strange

161

00:07:12,689 --> 00:07:18,029

blurry hinterland between beauty and

162

00:07:15,779 --> 00:07:20,339

health I think it's where it occupies it

163

00:07:18,029 --> 00:07:23,818

yes so tell us how you came to write the

164

00:07:20,339 --> 00:07:25,228

book well I'd wanted I'd been interested

165

00:07:23,819 --> 00:07:27,090

in the area for a very long time and

166

00:07:25,228 --> 00:07:31,050

getting kind of gradually simmering and

167

00:07:27,089 --> 00:07:32,218

simmering Lee angry about various claims

168

00:07:31,050 --> 00:07:34,530

that were being made in a way that

169

00:07:32,218 --> 00:07:38,399

people seem to be taking them up without

170

00:07:34,529 --> 00:07:42,000

any kind of critical thinking and I was

171

00:07:38,399 --> 00:07:45,120

really triggered to write it by a few in

172
00:07:42,000 --> 00:07:47,189
fact a few cases of people I knew who in

173
00:07:45,120 --> 00:07:50,908
a great health crisis we're turning to

174
00:07:47,189 --> 00:07:53,430
alternative practitioners and I just I

175
00:07:50,908 --> 00:07:55,800
got to enough is enough point and really

176
00:07:53,430 --> 00:07:58,019
wanted to do something and you were

177
00:07:55,800 --> 00:07:59,669
telling me yesterday that now when your

178
00:07:58,019 --> 00:08:00,918
friends ask you about what you've done

179
00:07:59,668 --> 00:08:03,930
and you say you've written a book about

180
00:08:00,918 --> 00:08:05,459
augmenting you used to say that and what

181
00:08:03,930 --> 00:08:08,250
would the boiler reaction would be well

182
00:08:05,459 --> 00:08:09,870
what used when I was right whilst I was

183
00:08:08,250 --> 00:08:11,189
writing it if somebody asked me what I

184
00:08:09,870 --> 00:08:12,810
was doing I say I'm writing a book about

185
00:08:11,189 --> 00:08:14,728
alternative medicine and they've kind of

186
00:08:12,810 --> 00:08:17,610
either gonna glaze over thinking oh my

187
00:08:14,728 --> 00:08:20,818
god what she's supporting or assume it

188
00:08:17,610 --> 00:08:22,949
was in support and that led to various

189
00:08:20,819 --> 00:08:24,670
confusing and slightly upsetting

190
00:08:22,949 --> 00:08:27,610
conversations probably

191
00:08:24,670 --> 00:08:29,770
and so I decided to shorten that so that

192
00:08:27,610 --> 00:08:32,470
when they asked me and and all anybody

193
00:08:29,769 --> 00:08:34,629
asked me what it is now I just say it's

194
00:08:32,470 --> 00:08:36,340
a book attacking alternative medicine so

195
00:08:34,629 --> 00:08:38,379
we know where we are but even then

196
00:08:36,340 --> 00:08:40,450
people find it hard to credit that it's

197
00:08:38,379 --> 00:08:42,399
possible certainly for a middle-aged

198
00:08:40,450 --> 00:08:45,550
middle-class woman to take this position

199
00:08:42,399 --> 00:08:47,169
I think his is a bit of a surprise so

200

00:08:45,549 --> 00:08:49,959
what sort of things do you cover in the

201
00:08:47,169 --> 00:08:53,169
book what alt meds do you look at I I

202
00:08:49,960 --> 00:08:55,480
tried to look at everything and anything

203
00:08:53,169 --> 00:08:59,099
that seemed to be making claims without

204
00:08:55,480 --> 00:09:03,250
evidence within the alternative range

205
00:08:59,100 --> 00:09:05,139
and so and it's in it was a weird thing

206
00:09:03,250 --> 00:09:09,850
because in a way they are all exactly

207
00:09:05,139 --> 00:09:12,419
the same and it was quite a difficult

208
00:09:09,850 --> 00:09:14,980
thing to find a way of telling

209
00:09:12,419 --> 00:09:18,219
describing each of their claims in each

210
00:09:14,980 --> 00:09:21,220
of their ideas and all ways in which

211
00:09:18,220 --> 00:09:23,050
they operate without repeating myself

212
00:09:21,220 --> 00:09:25,600
but I hope I've got away with that yeah

213
00:09:23,049 --> 00:09:26,709
so you were talking yesterday about one

214
00:09:25,600 --> 00:09:28,899

of the things you're interested in his

215

00:09:26,710 --> 00:09:31,450

alternative medicine for cancer yes and

216

00:09:28,899 --> 00:09:33,279

you came across a woman who is

217

00:09:31,450 --> 00:09:36,970

Australian actual that's right yes

218

00:09:33,279 --> 00:09:40,750

there's a woman I called Robin Welsh

219

00:09:36,970 --> 00:09:43,149

who's a medical intuitive is how she

220

00:09:40,750 --> 00:09:46,269

describes herself and she does her

221

00:09:43,149 --> 00:09:49,199

healing via a landline I think only so I

222

00:09:46,269 --> 00:09:53,169

don't know how things work out in 2013

223

00:09:49,200 --> 00:09:56,890

but she may bit but as I think as I

224

00:09:53,169 --> 00:09:59,439

found the alternative practitioners are

225

00:09:56,889 --> 00:10:01,629

infinitely adjustable they can find that

226

00:09:59,440 --> 00:10:03,820

they do suddenly find new energies that

227

00:10:01,629 --> 00:10:06,700

operate on a mobile phone that they were

228

00:10:03,820 --> 00:10:09,940

not aware of until now so maybe she's up

229
00:10:06,700 --> 00:10:12,160
to date yeah because she was she has she

230
00:10:09,940 --> 00:10:14,110
has issues with vibrations coming from

231
00:10:12,159 --> 00:10:16,750
phones and cameras and things I think

232
00:10:14,110 --> 00:10:19,509
she does yes I think I think they're

233
00:10:16,750 --> 00:10:22,120
negative energies which I'm sure must

234
00:10:19,509 --> 00:10:26,049
fog up the communication systems in a

235
00:10:22,120 --> 00:10:27,730
way we I just don't understand so you

236
00:10:26,049 --> 00:10:29,859
have investigated quite a lot of

237
00:10:27,730 --> 00:10:31,629
alternative things for cancer what a man

238
00:10:29,860 --> 00:10:34,970
come across that has really made you

239
00:10:31,629 --> 00:10:40,129
angry or disappointed or up

240
00:10:34,970 --> 00:10:42,528
I think anything that leads people to

241
00:10:40,129 --> 00:10:44,329
have those hope because i think it's the

242
00:10:42,528 --> 00:10:46,610
cruellest thing to do to a person who's

243
00:10:44,328 --> 00:10:49,219
facing a serious illness i can

244
00:10:46,610 --> 00:10:51,709
understand how appealing it is i've had

245
00:10:49,220 --> 00:10:53,360
breast cancer myself and i know at the

246
00:10:51,708 --> 00:10:55,758
moment when you're embarking on

247
00:10:53,360 --> 00:10:59,000
chemotherapy the idea of having a flower

248
00:10:55,759 --> 00:11:01,720
remedy instead is just is it's wonderful

249
00:10:59,000 --> 00:11:05,629
because it's a very hard road to travel

250
00:11:01,720 --> 00:11:08,778
if you have conventional treatment and

251
00:11:05,629 --> 00:11:11,060
so so that force that part of it that's

252
00:11:08,778 --> 00:11:13,549
the false hope i think is it's really

253
00:11:11,059 --> 00:11:17,869
the worst thing the thing that annoys me

254
00:11:13,549 --> 00:11:20,838
in inaccurate ated way is people who

255
00:11:17,870 --> 00:11:23,389
have conventional treatment and then

256
00:11:20,839 --> 00:11:26,750
after that do some sort of wheatgrass

257

00:11:23,389 --> 00:11:29,060
drink or flaxseed oil or acupuncture and

258
00:11:26,750 --> 00:11:32,299
attribute their survival to the

259
00:11:29,059 --> 00:11:35,869
acupuncture when they've had surgery

260
00:11:32,299 --> 00:11:38,479
radiotherapy chemotherapy or one of all

261
00:11:35,870 --> 00:11:40,278
of those and then do that attribution I

262
00:11:38,480 --> 00:11:41,839
find it very irritating do you have any

263
00:11:40,278 --> 00:11:43,850
understanding as to why people do that

264
00:11:41,839 --> 00:11:47,540
what is the psychology behind that I

265
00:11:43,850 --> 00:11:49,189
think there is um I mean I have to say

266
00:11:47,539 --> 00:11:51,198
that I think that people who use

267
00:11:49,188 --> 00:11:54,110
alternative medicine clearly like using

268
00:11:51,198 --> 00:11:55,818
it and find it very helpful and

269
00:11:54,110 --> 00:11:57,589
empowering and I think that's probably

270
00:11:55,818 --> 00:11:59,838
the key particularly in relation to

271
00:11:57,589 --> 00:12:01,250

cancer because cancer makes you feel

272

00:11:59,839 --> 00:12:03,589

that you have no power that you have

273

00:12:01,250 --> 00:12:05,299

your you're confronting something that

274

00:12:03,589 --> 00:12:08,480

is bigger than you are and I think

275

00:12:05,299 --> 00:12:11,479

alternative medicine keys in really

276

00:12:08,480 --> 00:12:14,058

effectively to the need to feel that you

277

00:12:11,480 --> 00:12:16,699

are taking some control but there are

278

00:12:14,058 --> 00:12:18,438

other ways to do that that you that I

279

00:12:16,698 --> 00:12:21,019

don't think are alternative or things

280

00:12:18,438 --> 00:12:25,129

like taking a lot of exercise and all

281

00:12:21,019 --> 00:12:27,500

that enjoying yourself with your friends

282

00:12:25,129 --> 00:12:30,110

which again some of these regimes with

283

00:12:27,500 --> 00:12:32,269

in cancer therapy deny those things to

284

00:12:30,110 --> 00:12:34,430

you say Gerson Therapy where you have to

285

00:12:32,269 --> 00:12:37,068

be met juicing 13 times a day and eating

286
00:12:34,429 --> 00:12:40,039
separately the things that it's worth

287
00:12:37,068 --> 00:12:42,229
living for are denied I mean you told me

288
00:12:40,039 --> 00:12:44,808
a story yesterday about a lady who had

289
00:12:42,230 --> 00:12:46,970
all her teeth removed yes yes there was

290
00:12:44,808 --> 00:12:47,519
one case that was reported by the BBC of

291
00:12:46,970 --> 00:12:50,759
some

292
00:12:47,519 --> 00:12:55,319
d who was following the hall de klerk

293
00:12:50,759 --> 00:12:57,840
who's a now-deceased I think of cancer

294
00:12:55,320 --> 00:13:00,540
yes she does yes she had a magical

295
00:12:57,840 --> 00:13:03,120
zapping cancer cure yes yes and she

296
00:13:00,539 --> 00:13:05,189
believed that all cancers as so many

297
00:13:03,120 --> 00:13:07,500
alternative medicine practitioners do

298
00:13:05,190 --> 00:13:10,200
they have a single cause for all

299
00:13:07,500 --> 00:13:13,830
diseases very often and she believed

300
00:13:10,200 --> 00:13:16,620
that it was caused by a kind of fluke

301
00:13:13,830 --> 00:13:21,830
that occupied the body and toxins the

302
00:13:16,620 --> 00:13:24,240
usual some not ask yes yes yes and a

303
00:13:21,830 --> 00:13:27,000
practitioner who was a I think

304
00:13:24,240 --> 00:13:30,210
practicing her method told a woman who

305
00:13:27,000 --> 00:13:32,190
was in the last few weeks of life with

306
00:13:30,210 --> 00:13:34,230
pancreatic cancer I think that she

307
00:13:32,190 --> 00:13:36,630
needed to have all her teeth removed and

308
00:13:34,230 --> 00:13:38,190
she because they were full of toxins and

309
00:13:36,629 --> 00:13:40,049
that's what was causing the cancer and

310
00:13:38,190 --> 00:13:42,390
so she spent I think five weeks before

311
00:13:40,049 --> 00:13:46,109
she died she had all her teeth removed

312
00:13:42,389 --> 00:13:49,080
by a self-styled holistic dentist cuz

313
00:13:46,110 --> 00:13:52,289
it's is cruelty and exploitation of the

314

00:13:49,080 --> 00:13:53,879
way it is yeah so European what's your

315
00:13:52,289 --> 00:13:55,409
opinion of these sort of integrated

316
00:13:53,879 --> 00:13:57,419
cancer centers that are popping up all

317
00:13:55,409 --> 00:13:58,980
over the place that offer complementary

318
00:13:57,419 --> 00:14:03,769
therapies along with conventional

319
00:13:58,980 --> 00:14:06,180
science-based medicine well I think it's

320
00:14:03,769 --> 00:14:08,610
fundamentally it's a question of what

321
00:14:06,179 --> 00:14:11,279
claims they're making if they're making

322
00:14:08,610 --> 00:14:13,620
any claim beyond this might cheer you up

323
00:14:11,279 --> 00:14:17,459
a bit or make you feel a bit more

324
00:14:13,620 --> 00:14:18,750
relaxed or two so that you might sleep

325
00:14:17,460 --> 00:14:21,780
better because you're more relaxed

326
00:14:18,750 --> 00:14:24,240
that's for me that's where it stops in

327
00:14:21,779 --> 00:14:28,829
terms of it being acceptable and I think

328
00:14:24,240 --> 00:14:30,629

there's a very but because they are it's

329

00:14:28,830 --> 00:14:33,090

very easy to think even if they don't

330

00:14:30,629 --> 00:14:34,830

explicitly say that doing something will

331

00:14:33,090 --> 00:14:37,470

change the course of your illness it

332

00:14:34,830 --> 00:14:38,820

seems very often to me to be easy to

333

00:14:37,470 --> 00:14:41,009

read that between the lines especially

334

00:14:38,820 --> 00:14:43,530

when you're in the state of experience

335

00:14:41,009 --> 00:14:45,299

of cancer the cancer illness so if

336

00:14:43,529 --> 00:14:47,429

someone came to off your foot massage if

337

00:14:45,299 --> 00:14:49,620

they pee yes reflexology rather than and

338

00:14:47,429 --> 00:14:51,329

yes yes yes exactly that might lead i

339

00:14:49,620 --> 00:14:54,000

think it's going to do something yes it

340

00:14:51,330 --> 00:14:55,020

can assist you can yes yeah yeah i mean

341

00:14:54,000 --> 00:14:57,539

you were talking yesterday about the

342

00:14:55,019 --> 00:14:59,179

thin and if thin end of the wedge in

343
00:14:57,539 --> 00:15:01,669
terms of alternative therapies

344
00:14:59,179 --> 00:15:03,199
think he said the the fat end is cancer

345
00:15:01,669 --> 00:15:08,089
and what's up the top in the skinny end

346
00:15:03,200 --> 00:15:10,460
um the skinny end would be homeopathic

347
00:15:08,090 --> 00:15:13,220
teething granules you know I mean

348
00:15:10,460 --> 00:15:14,870
they're they're made of lactose they

349
00:15:13,220 --> 00:15:17,060
cost rather a lot of money for a small

350
00:15:14,870 --> 00:15:19,340
amount of lactose you put them in your

351
00:15:17,059 --> 00:15:21,049
child's mouth and everybody relax is

352
00:15:19,340 --> 00:15:23,660
slightly and maybe the child is having

353
00:15:21,049 --> 00:15:27,979
nice sweet tasting in her mouth and so

354
00:15:23,659 --> 00:15:31,519
she stops bawling but I guess it's a

355
00:15:27,980 --> 00:15:34,550
continuum but I do feel that that the

356
00:15:31,519 --> 00:15:36,980
acceptance of things that are really no

357
00:15:34,549 --> 00:15:39,199
harm to anybody particularly I think

358
00:15:36,980 --> 00:15:41,870
that that has a kind of effect on the

359
00:15:39,200 --> 00:15:46,580
climate that leads people to feel that

360
00:15:41,870 --> 00:15:48,860
the really hard exploitative end is more

361
00:15:46,580 --> 00:15:50,840
acceptable so there's been some

362
00:15:48,860 --> 00:15:53,419
discussion this weekend about NHS

363
00:15:50,840 --> 00:15:54,560
Choices the NHS is the National Health

364
00:15:53,419 --> 00:15:56,779
Service which has recently being

365
00:15:54,559 --> 00:15:58,519
privatized in the UK well it's not as

366
00:15:56,779 --> 00:16:00,199
yet it's more complicated than that but

367
00:15:58,519 --> 00:16:02,629
I don't understand it but fortunately

368
00:16:00,200 --> 00:16:05,509
nobody understands and where say ok but

369
00:16:02,629 --> 00:16:07,909
so by the government offering choices in

370
00:16:05,509 --> 00:16:10,850
terms of say homeopathy as an option in

371

00:16:07,909 --> 00:16:13,189
the from public money that in a ways I

372
00:16:10,850 --> 00:16:16,220
guess the thin end of the wedge in that

373
00:16:13,190 --> 00:16:17,420
people begin to accept it yeah I think I

374
00:16:16,220 --> 00:16:18,920
mean it's going to be interesting to see

375
00:16:17,419 --> 00:16:23,269
how that works out because it isn't

376
00:16:18,919 --> 00:16:25,219
quite like that those choices for

377
00:16:23,269 --> 00:16:27,590
funding have been devolved to a more

378
00:16:25,220 --> 00:16:30,139
local level of general practitioners and

379
00:16:27,590 --> 00:16:31,790
I think quite a lot of them won't want

380
00:16:30,139 --> 00:16:34,220
to pay for it because they're paying for

381
00:16:31,789 --> 00:16:35,719
out of their budget their money and one

382
00:16:34,220 --> 00:16:37,430
would hope that they'll be robust about

383
00:16:35,720 --> 00:16:39,230
it and say you know you do it if you

384
00:16:37,429 --> 00:16:42,769
want to go down to your chemist and buy

385
00:16:39,230 --> 00:16:44,930

this stuff it's up to you but but I hope

386

00:16:42,769 --> 00:16:46,840

that they'll be robust and unref used to

387

00:16:44,929 --> 00:16:49,849

do it yeah and that is happening

388

00:16:46,840 --> 00:16:52,340

increasingly in terms of GP referral

389

00:16:49,850 --> 00:16:53,930

anyway I think so have you got any

390

00:16:52,340 --> 00:16:55,699

players to write another book a sequel

391

00:16:53,929 --> 00:16:58,668

perhaps two suckers or something

392

00:16:55,698 --> 00:17:00,258

no I sort of various things come out of

393

00:16:58,668 --> 00:17:03,708

it and still I'm still doing a lot of

394

00:17:00,259 --> 00:17:07,389

work related to that book and various

395

00:17:03,708 --> 00:17:09,980

things that I'm interested in such as

396

00:17:07,388 --> 00:17:12,408

the ill I did I discover that a lot of

397

00:17:09,980 --> 00:17:14,179

the illnesses that alter that the blood

398

00:17:12,409 --> 00:17:16,459

of people who go to alternative

399

00:17:14,179 --> 00:17:17,899

practitioners have what and often

400
00:17:16,459 --> 00:17:20,689
describes medically unexplained

401
00:17:17,898 --> 00:17:23,658
illnesses and they can they can be

402
00:17:20,689 --> 00:17:25,419
horribly exploited by alternative

403
00:17:23,659 --> 00:17:27,319
practitioners and say people with

404
00:17:25,419 --> 00:17:31,340
conditions like chronic fatigue syndrome

405
00:17:27,318 --> 00:17:34,158
go from one to another because it cut

406
00:17:31,339 --> 00:17:36,138
because if they're promised so much but

407
00:17:34,159 --> 00:17:39,200
but they're not really helped yeah is

408
00:17:36,138 --> 00:17:40,638
that something you've been yes yes well

409
00:17:39,200 --> 00:17:41,778
I hope we do see another book for

410
00:17:40,638 --> 00:17:43,969
memories because we loved your book

411
00:17:41,778 --> 00:17:45,769
adding key my colleague job enemy who's

412
00:17:43,970 --> 00:17:47,149
on the podcast so she uses your book for

413
00:17:45,769 --> 00:17:48,950
references all the time going to

414
00:17:47,148 --> 00:17:50,928
parently got post-it notes and dog ear

415
00:17:48,950 --> 00:17:52,548
really well I did the good thing about

416
00:17:50,929 --> 00:17:55,220
it is because it's all based on ancient

417
00:17:52,548 --> 00:17:58,398
wisdom which never changes it's always

418
00:17:55,220 --> 00:18:01,538
up to date you don't know but thanks for

419
00:17:58,398 --> 00:18:01,538
talking to us revelation

420
00:18:06,839 --> 00:18:11,470
hi there this is ben Radford from

421
00:18:09,430 --> 00:18:14,170
skeptical inquirer magazine the monster

422
00:18:11,470 --> 00:18:16,029
talk podcast Discovery News skeptical

423
00:18:14,170 --> 00:18:17,200
conferences and elsewhere you may also

424
00:18:16,029 --> 00:18:19,059
know me as the guy that's all the

425
00:18:17,200 --> 00:18:20,230
chupacabra mystery I want to let you

426
00:18:19,059 --> 00:18:22,690
know about a cool new board game I

427
00:18:20,230 --> 00:18:24,309
created called undead apocalypse war of

428

00:18:22,690 --> 00:18:26,590
the damned undead apocalypse has

429
00:18:24,309 --> 00:18:28,210
vampires and werewolves and zombies all

430
00:18:26,589 --> 00:18:30,699
battling it out in a post-apocalyptic

431
00:18:28,210 --> 00:18:33,160
world with humans so it's sort of like

432
00:18:30,700 --> 00:18:34,360
Mad Max meets the walking dead so if

433
00:18:33,160 --> 00:18:36,160
you're interested in zombies and

434
00:18:34,359 --> 00:18:38,740
werewolves and vampires or board games

435
00:18:36,160 --> 00:18:41,140
of any kind or my work please check it

436
00:18:38,740 --> 00:18:44,079
out thanks i appreciate undead

437
00:18:41,140 --> 00:18:47,160
apocalypse the fast pace for game where

438
00:18:44,079 --> 00:18:50,470
you control armies of zombies vampires

439
00:18:47,160 --> 00:18:53,650
werewolves and humans in Earth's final

440
00:18:50,470 --> 00:18:56,140
war of the damned learn more at undead

441
00:18:53,650 --> 00:19:00,509
board game com or support us on

442
00:18:56,140 --> 00:19:00,509

kickstarter com before july eighth

443

00:19:05,099 --> 00:19:11,740

welcome to a week in science from RI oz

444

00:19:08,289 --> 00:19:14,170

this week regrowing nerves genes for

445

00:19:11,740 --> 00:19:17,190

migraines and monkeying around with

446

00:19:14,170 --> 00:19:17,190

social networks

447

00:19:22,609 --> 00:19:26,789

we used to think that nerves in the

448

00:19:25,289 --> 00:19:29,069

central nervous system couldn't

449

00:19:26,789 --> 00:19:31,009

regenerate after an injury but new

450

00:19:29,069 --> 00:19:33,509

research has not that on the head

451

00:19:31,009 --> 00:19:35,339

microscopic analysis of damaged nerves

452

00:19:33,509 --> 00:19:37,500

in the central nervous system of mice

453

00:19:35,339 --> 00:19:39,990

reveals that they not only regenerate

454

00:19:37,500 --> 00:19:41,640

but they do so it rates comparable to

455

00:19:39,990 --> 00:19:43,980

the regrowth of other parts of the

456

00:19:41,640 --> 00:19:46,020

nervous system the researchers are

457
00:19:43,980 --> 00:19:49,019
unsure why or how this regeneration

458
00:19:46,019 --> 00:19:51,539
happens but the observation opens up new

459
00:19:49,019 --> 00:19:55,920
areas of research into regrowing damaged

460
00:19:51,539 --> 00:19:58,470
nerves in humans there's good news for

461
00:19:55,920 --> 00:20:00,960
sports fans this week humans have

462
00:19:58,470 --> 00:20:02,880
evolved for throwing a number of

463
00:20:00,960 --> 00:20:04,740
anatomical features in the human

464
00:20:02,880 --> 00:20:07,380
shoulder have been shown to boost

465
00:20:04,740 --> 00:20:10,259
throwing power and accuracy these

466
00:20:07,380 --> 00:20:12,480
shoulder features only appeared after we

467
00:20:10,259 --> 00:20:15,089
started walking upright when the hands

468
00:20:12,480 --> 00:20:17,430
and arms were free these features date

469
00:20:15,089 --> 00:20:20,669
back at least two million years to our

470
00:20:17,430 --> 00:20:22,860
ancestors Homo erectus suggesting their

471
00:20:20,670 --> 00:20:25,140
anatomy developed to throw Spears and

472
00:20:22,859 --> 00:20:27,389
other objects when hunting you're

473
00:20:25,140 --> 00:20:30,990
listening to a week in science from our

474
00:20:27,390 --> 00:20:33,720
iOS and now for size headlines in 30

475
00:20:30,990 --> 00:20:36,140
seconds 12 sites on the human genome

476
00:20:33,720 --> 00:20:39,000
have been linked to migraines and

477
00:20:36,140 --> 00:20:41,700
remember visual clues to help find their

478
00:20:39,000 --> 00:20:44,130
way home plants accurately measure their

479
00:20:41,700 --> 00:20:45,870
stored energy and then calculate how

480
00:20:44,130 --> 00:20:48,480
much to use to last them through the

481
00:20:45,869 --> 00:20:50,699
night and a strong correlation has been

482
00:20:48,480 --> 00:20:52,740
found between people's maths ability and

483
00:20:50,700 --> 00:20:56,069
the likelihood that they will default on

484
00:20:52,740 --> 00:20:58,680
their home mortgage and finally this

485

00:20:56,069 --> 00:21:01,259
week monkeys use social networks to

486
00:20:58,680 --> 00:21:03,539
spread ideas dominant monkeys were

487
00:21:01,259 --> 00:21:05,730
isolated from their troops and shown two

488
00:21:03,539 --> 00:21:08,430
different ways to open a box containing

489
00:21:05,730 --> 00:21:10,670
food either by lifting a flap or

490
00:21:08,430 --> 00:21:13,380
pivoting that flat from side to side

491
00:21:10,670 --> 00:21:15,570
when these monkeys will reintroduce to

492
00:21:13,380 --> 00:21:18,120
their troops researchers followed how

493
00:21:15,569 --> 00:21:20,159
quickly the new behaviors spread they

494
00:21:18,119 --> 00:21:22,199
found that groups organized around a

495
00:21:20,160 --> 00:21:25,230
strong central leader spread the new

496
00:21:22,200 --> 00:21:28,029
ideas more quickly

497
00:21:25,230 --> 00:21:30,700
arias goes to Western Australia next

498
00:21:28,029 --> 00:21:33,339
month for a special event in Albany

499
00:21:30,700 --> 00:21:35,769

we're asking what the future holds for

500

00:21:33,339 --> 00:21:38,349

regional towns like alberni in the face

501

00:21:35,769 --> 00:21:40,799

of impending global problems more

502

00:21:38,349 --> 00:21:44,349

details can be found on our website

503

00:21:40,799 --> 00:21:46,539

re-org a you that's been the highlights

504

00:21:44,349 --> 00:21:48,669

of another big week in science for more

505

00:21:46,539 --> 00:21:53,379

information and other science news check

506

00:21:48,670 --> 00:21:55,480

out the rirs website RI aus org a you

507

00:21:53,380 --> 00:21:58,540

where you can also sign up for

508

00:21:55,480 --> 00:22:00,339

notifications of future episodes you can

509

00:21:58,539 --> 00:22:03,700

follow a week in science on twitter

510

00:22:00,339 --> 00:22:06,730

using the hashtag week inside i'm paul

511

00:22:03,700 --> 00:22:09,269

willis and on behalf of the RAS teen see

512

00:22:06,730 --> 00:22:09,269

you next week

513

00:22:18,808 --> 00:22:22,740

be reasonable is a podcast of the

514
00:22:20,970 --> 00:22:24,960
Merseyside skeptics society featuring

515
00:22:22,740 --> 00:22:27,028
hayley stevens and Michael Marshall each

516
00:22:24,960 --> 00:22:29,278
monthly interview explores beliefs from

517
00:22:27,028 --> 00:22:30,778
outside of the mainstream engaging with

518
00:22:29,278 --> 00:22:32,579
proponents of those beliefs to examine

519
00:22:30,778 --> 00:22:35,548
the evidence and reasoning behind each

520
00:22:32,579 --> 00:22:37,648
idea in June's episode we speak with

521
00:22:35,548 --> 00:22:39,418
novena shine who made the headlines with

522
00:22:37,648 --> 00:22:42,329
her attempt to live for six months

523
00:22:39,419 --> 00:22:44,639
without food listen to novena story and

524
00:22:42,329 --> 00:22:47,038
back issues of the show by visiting

525
00:22:44,638 --> 00:22:49,019
merseyside skeptics talked at UK forward

526
00:22:47,038 --> 00:23:06,118
slash podcasts or search for be

527
00:22:49,019 --> 00:23:08,099
reasonable on itunes pressure continues

528
00:23:06,118 --> 00:23:11,849
to rise on the Australian vaccination

529
00:23:08,099 --> 00:23:13,709
network to shut down this week stop the

530
00:23:11,849 --> 00:23:16,079
Australian vaccination Network which was

531
00:23:13,710 --> 00:23:18,329
established over four years ago got a

532
00:23:16,079 --> 00:23:21,259
shout-out in federal parliament when

533
00:23:18,329 --> 00:23:23,819
greens senator dr. Richard Di Natale

534
00:23:21,259 --> 00:23:25,829
introduced a motion to Parliament to

535
00:23:23,819 --> 00:23:29,490
request the Australian vaccination

536
00:23:25,829 --> 00:23:31,439
network to be disbanded immediately the

537
00:23:29,490 --> 00:23:34,048
motion was voted in unanimously on

538
00:23:31,440 --> 00:23:36,210
Tuesday and on Thursday he made a ten

539
00:23:34,048 --> 00:23:38,668
minute long speech detailing the reasons

540
00:23:36,210 --> 00:23:40,919
why the Australian vaccination at work

541
00:23:38,669 --> 00:23:43,230
needed to be stopped we'll play a

542

00:23:40,919 --> 00:23:45,119
section from that speech in a moment but

543
00:23:43,230 --> 00:23:47,099
just to remind listeners this is not the

544
00:23:45,118 --> 00:23:50,069
first time the Australian vaccination at

545
00:23:47,099 --> 00:23:53,308
work or avian have got a mention in

546
00:23:50,069 --> 00:23:54,749
Parliament in a derogatory sense but

547
00:23:53,308 --> 00:23:57,749
this is the first time a federal

548
00:23:54,749 --> 00:23:59,788
politician has become involved in New

549
00:23:57,749 --> 00:24:01,829
South Wales there has been several

550
00:23:59,788 --> 00:24:03,740
occasions where politicians of all

551
00:24:01,829 --> 00:24:07,199
colors have stood shoulder to shoulder

552
00:24:03,740 --> 00:24:09,749
united in their damnation of the avian

553
00:24:07,200 --> 00:24:11,278
dr a cheese blog details some of the

554
00:24:09,749 --> 00:24:13,829
exits from the New South Wales

555
00:24:11,278 --> 00:24:15,628
statements and I'll link to this in the

556
00:24:13,829 --> 00:24:17,849

show notes but what does all this mean

557

00:24:15,628 --> 00:24:20,339
well probably not a whole lot in

558

00:24:17,849 --> 00:24:22,408
practical terms there is not much the

559

00:24:20,339 --> 00:24:25,259
federal government can do about the

560

00:24:22,409 --> 00:24:27,960
avian hence the use of the terms request

561

00:24:25,259 --> 00:24:30,118
to shut down however what this does do

562

00:24:27,960 --> 00:24:31,700
is to add another government body to the

563

00:24:30,118 --> 00:24:34,099
long list of Department

564

00:24:31,700 --> 00:24:36,830
who clearly have the avian in their

565

00:24:34,099 --> 00:24:39,319
sights it also sends a strong message to

566

00:24:36,829 --> 00:24:41,750
the public that the avian is not a

567

00:24:39,319 --> 00:24:44,269
reliable or respectable source for

568

00:24:41,750 --> 00:24:47,630
information and it totally and

569

00:24:44,269 --> 00:24:49,970
thoroughly annoyed the avian so much so

570

00:24:47,630 --> 00:24:52,429
that their new president greg BTW call

571
00:24:49,970 --> 00:24:54,620
up senator didn't tally and gave him a

572
00:24:52,429 --> 00:24:56,929
piece of his mind so to speak how do we

573
00:24:54,619 --> 00:25:00,048
know this well because he recorded the

574
00:24:56,929 --> 00:25:02,509
conversation mostly only his side can be

575
00:25:00,048 --> 00:25:04,849
heard and merrill dory posted it on a

576
00:25:02,509 --> 00:25:07,278
blog BTW can be heard raising his voice

577
00:25:04,849 --> 00:25:10,278
of the senator and pretty much sounding

578
00:25:07,278 --> 00:25:12,589
like a petulant toddler which is bad

579
00:25:10,278 --> 00:25:14,599
enough but may not be the worst thing

580
00:25:12,589 --> 00:25:17,119
about this call in some parts of

581
00:25:14,599 --> 00:25:19,278
australia it is illegal to record and

582
00:25:17,119 --> 00:25:22,129
broadcast phone calls without the other

583
00:25:19,278 --> 00:25:24,259
person's permission which is why in this

584
00:25:22,130 --> 00:25:26,690
country many call centers have phrases

585
00:25:24,259 --> 00:25:28,250
like this call will be recorded please

586
00:25:26,690 --> 00:25:30,710
advise if you don't want this to happen

587
00:25:28,250 --> 00:25:33,169
it seems doubtful that BTW has the

588
00:25:30,710 --> 00:25:36,470
permission from center to denote ali to

589
00:25:33,169 --> 00:25:38,330
broadcast this conversation so he may be

590
00:25:36,470 --> 00:25:40,370
in trouble for a lot more than just

591
00:25:38,329 --> 00:25:42,918
spreading misinformation about

592
00:25:40,369 --> 00:25:45,288
vaccinations we'll keep you posted if

593
00:25:42,919 --> 00:25:47,690
there are any further developments in

594
00:25:45,288 --> 00:25:50,869
the meantime here is the audio from

595
00:25:47,690 --> 00:25:53,058
senator dinatale speech which was posted

596
00:25:50,869 --> 00:25:55,658
on youtube and should be spread far and

597
00:25:53,058 --> 00:25:57,888
wide link will be in the show notes

598
00:25:55,659 --> 00:26:00,200
congratulations to Senator Dino tally

599

00:25:57,888 --> 00:26:04,689
for standing up to the Australian

600
00:26:00,200 --> 00:26:07,250
vaccination Network few parents today

601
00:26:04,690 --> 00:26:09,769
have had the experience of watching a

602
00:26:07,250 --> 00:26:13,329
child with measles develop complications

603
00:26:09,769 --> 00:26:16,038
that become a life-threatening condition

604
00:26:13,329 --> 00:26:18,888
we're spared the horror of watching a

605
00:26:16,038 --> 00:26:21,940
child with whooping cough turned blue

606
00:26:18,888 --> 00:26:24,408
and suffer a seizure from a coughing fit

607
00:26:21,940 --> 00:26:27,110
we're no longer encounter people on a

608
00:26:24,409 --> 00:26:30,970
daily basis whose limbs have been

609
00:26:27,109 --> 00:26:33,528
twisted by paralytic poliomyelitis as

610
00:26:30,970 --> 00:26:35,870
these horrors have faded from daily life

611
00:26:33,528 --> 00:26:38,538
we should be celebrating the life saving

612
00:26:35,869 --> 00:26:42,459
innovation that has saved us and now

613
00:26:38,538 --> 00:26:45,559

kids from death and disease instead

614

00:26:42,460 --> 00:26:49,059

there are people who now question

615

00:26:45,559 --> 00:26:51,669

ennis of vaccine itself the avian

616

00:26:49,059 --> 00:26:54,440

Australian vaccination Network

617

00:26:51,670 --> 00:26:56,660

misleadingly named founded in nineteen

618

00:26:54,440 --> 00:27:00,200

ninety-four have styled themselves as

619

00:26:56,660 --> 00:27:03,019

providers of vaccine information in fact

620

00:27:00,200 --> 00:27:06,860

their mission is to deter patients from

621

00:27:03,019 --> 00:27:09,079

getting their children vaccinated they

622

00:27:06,859 --> 00:27:10,849

accomplished their mission by sowing

623

00:27:09,079 --> 00:27:12,949

fear and doubt in the minds of parents

624

00:27:10,849 --> 00:27:16,669

who of young kids and dressing it up in

625

00:27:12,950 --> 00:27:18,680

the language of science they pretend to

626

00:27:16,670 --> 00:27:21,110

be mutual providers of information to

627

00:27:18,680 --> 00:27:24,640

allow parents to make a choice but in

628
00:27:21,109 --> 00:27:27,169
reality they are fiercely anti-vaccine

629
00:27:24,640 --> 00:27:29,000
the claims made by the avian and

630
00:27:27,170 --> 00:27:32,840
particularly by their founder miss

631
00:27:29,000 --> 00:27:34,730
Merrill Dori beggar belief despite being

632
00:27:32,839 --> 00:27:36,679
corrected numerous times by health

633
00:27:34,730 --> 00:27:39,019
professional scientists and so on they

634
00:27:36,680 --> 00:27:43,039
continue to propagate outright myths

635
00:27:39,019 --> 00:27:45,889
about vaccines and their safety they say

636
00:27:43,039 --> 00:27:47,960
that the mmm MMR vaccine causes autism a

637
00:27:45,890 --> 00:27:51,470
claim they know that has been thoroughly

638
00:27:47,960 --> 00:27:53,420
and comprehensively debunked they claim

639
00:27:51,470 --> 00:27:56,299
links between vaccines and sudden infant

640
00:27:53,420 --> 00:27:58,450
death syndrome they claim HPV does not

641
00:27:56,299 --> 00:28:00,710
cause cancer but that vaccines do

642
00:27:58,450 --> 00:28:03,080
they're on the record claiming that

643
00:28:00,710 --> 00:28:06,680
pertussis or whooping cough is not safe

644
00:28:03,079 --> 00:28:09,500
and has not been tested the list goes on

645
00:28:06,680 --> 00:28:13,039
as well as making false claims about

646
00:28:09,500 --> 00:28:15,319
vaccines miss story and the avian make

647
00:28:13,039 --> 00:28:17,930
even more looted ludicrous claims about

648
00:28:15,319 --> 00:28:20,149
the diseases they were designed to

649
00:28:17,930 --> 00:28:22,279
prevent they dispute the harms of

650
00:28:20,150 --> 00:28:25,850
dangerous childhood diseases in order to

651
00:28:22,279 --> 00:28:28,160
downplay the benefits of a vaccine one

652
00:28:25,849 --> 00:28:30,559
especially preposterous example of this

653
00:28:28,160 --> 00:28:33,800
claim is that measles is beneficial to

654
00:28:30,559 --> 00:28:36,769
children making them more robust than

655
00:28:33,799 --> 00:28:38,809
leading to growth spurts a Miss story

656

00:28:36,769 --> 00:28:42,200
has claimed that the word measles in

657
00:28:38,809 --> 00:28:45,169
Sanskrit means gift from a goddess and

658
00:28:42,200 --> 00:28:47,509
has publicized a book called Melanie's

659
00:28:45,170 --> 00:28:49,580
marvelous measles the downplays the

660
00:28:47,509 --> 00:28:52,250
dangers of this disease well mr.

661
00:28:49,579 --> 00:28:54,619
president as a doctor I can inform the

662
00:28:52,250 --> 00:28:57,230
Senate that measles isn't a magical gift

663
00:28:54,619 --> 00:28:59,159
from mother nature it's a virus that

664
00:28:57,230 --> 00:29:01,259
damages the human body

665
00:28:59,160 --> 00:29:05,400
and has the potential for serious and

666
00:29:01,259 --> 00:29:07,589
sometimes fatal complications in 2001

667
00:29:05,400 --> 00:29:09,390
the World Health Organization estimated

668
00:29:07,589 --> 00:29:13,230
a hundred and fifty-eight thousand

669
00:29:09,390 --> 00:29:15,210
deaths from this disease it's one of the

670
00:29:13,230 --> 00:29:17,940

leading causes of preventable disease

671

00:29:15,210 --> 00:29:20,340

worldwide and to suggest that a parent

672

00:29:17,940 --> 00:29:23,160

should deliberately expose their child

673

00:29:20,339 --> 00:29:27,179

to this disease is reckless it's

674

00:29:23,160 --> 00:29:29,370

dangerous and it can be fatal when

675

00:29:27,180 --> 00:29:32,430

concerned citizens seek to shine a light

676

00:29:29,369 --> 00:29:34,799

on the absurd beliefs of the avn their

677

00:29:32,430 --> 00:29:37,470

reactions are telling doctors are called

678

00:29:34,799 --> 00:29:41,099

killers and terrorists and vaccinations

679

00:29:37,470 --> 00:29:42,660

linked or likened to rape by the avn to

680

00:29:41,099 --> 00:29:44,909

silence critics they take out

681

00:29:42,660 --> 00:29:47,519

apprehended violent apprehended violence

682

00:29:44,910 --> 00:29:49,620

orders and when tragedies have occurred

683

00:29:47,519 --> 00:29:51,990

that put lie to their nonsensical claims

684

00:29:49,619 --> 00:29:54,809

they've gone so far as to harass

685
00:29:51,990 --> 00:29:57,660
grieving parents miss story is alleged

686
00:29:54,809 --> 00:29:59,730
to have called Chris coca guy whose

687
00:29:57,660 --> 00:30:01,320
child died of chickenpox and said that

688
00:29:59,730 --> 00:30:04,650
his child died because his child was

689
00:30:01,319 --> 00:30:06,569
weak in 2009 Danny McCaffrey the

690
00:30:04,650 --> 00:30:08,700
daughter of david and Tony McCaffrey

691
00:30:06,569 --> 00:30:11,759
tragically died from the whooping cough

692
00:30:08,700 --> 00:30:14,100
infection and incredibly in response to

693
00:30:11,759 --> 00:30:16,170
this tragedy miss Dorry went as far as

694
00:30:14,099 --> 00:30:18,359
to contact the New South Wales Director

695
00:30:16,170 --> 00:30:20,039
of Public Health to dispute the cause of

696
00:30:18,359 --> 00:30:23,250
death and ask for confidential medical

697
00:30:20,039 --> 00:30:24,690
information when the story became public

698
00:30:23,250 --> 00:30:27,269
they had to into your months of

699

00:30:24,690 --> 00:30:29,730

harassment from the avian and had to

700

00:30:27,269 --> 00:30:31,589

wind your watching dorigo on TV denial

701

00:30:29,730 --> 00:30:33,809

denying a child who died of whooping

702

00:30:31,589 --> 00:30:37,049

cough and accusing them of turning dana

703

00:30:33,809 --> 00:30:39,569

into a martyr but fortunately there are

704

00:30:37,049 --> 00:30:41,639

people in the community fighting against

705

00:30:39,569 --> 00:30:44,669

the harmful and bullying tactics of the

706

00:30:41,640 --> 00:30:47,730

avian in response to this disgraceful

707

00:30:44,670 --> 00:30:50,100

harassment of the McCaffrey's the group

708

00:30:47,730 --> 00:30:52,110

stopped the avian was formed with the

709

00:30:50,099 --> 00:30:54,059

purpose of combat combating the

710

00:30:52,109 --> 00:30:56,759

dangerous campaign and I'm grateful to

711

00:30:54,059 --> 00:30:59,549

people like Daniel Raphael Peter

712

00:30:56,759 --> 00:31:01,829

Bowditch Ken MacLeod and others who have

713

00:30:59,549 --> 00:31:04,889
endured the harassment of miss Dorry and

714
00:31:01,829 --> 00:31:07,109
her followers but they do it in order to

715
00:31:04,890 --> 00:31:09,240
save other parents the unending pain and

716
00:31:07,109 --> 00:31:12,719
heartache that they themselves have had

717
00:31:09,240 --> 00:31:13,259
to endure mr. president Dana McCaffrey

718
00:31:12,720 --> 00:31:15,720
was too

719
00:31:13,259 --> 00:31:18,690
to receive the whooping cough vaccine

720
00:31:15,720 --> 00:31:20,549
she died though because the vaccination

721
00:31:18,690 --> 00:31:22,200
rate in the northern rivers area of New

722
00:31:20,549 --> 00:31:25,099
South Wales where she's born is

723
00:31:22,200 --> 00:31:28,880
alarmingly low at only seventy percent

724
00:31:25,099 --> 00:31:33,119
when you reach a threshold at that level

725
00:31:28,880 --> 00:31:35,910
the conditions for an outbreak occur and

726
00:31:33,119 --> 00:31:38,039
the virus was only able to survive and

727
00:31:35,910 --> 00:31:41,700

thrive in that community because

728

00:31:38,039 --> 00:31:44,909

vaccination rates were so low and it's

729

00:31:41,700 --> 00:31:46,710

this area this very area where the avian

730

00:31:44,910 --> 00:31:49,440

is strongest and where they're based

731

00:31:46,710 --> 00:31:51,930

they are the consequence of an

732

00:31:49,440 --> 00:31:56,070

irresponsible campaign based on fear and

733

00:31:51,930 --> 00:31:58,200

lies unfortunately I don't have time to

734

00:31:56,069 --> 00:32:00,569

complete the catalogue of crimes against

735

00:31:58,200 --> 00:32:03,269

reason and common decency perpetrated by

736

00:32:00,569 --> 00:32:06,329

this group I don't know what motivates

737

00:32:03,269 --> 00:32:08,759

them I imagine that they are sincere but

738

00:32:06,329 --> 00:32:11,480

they are misguided probably due to some

739

00:32:08,759 --> 00:32:15,839

combination of soup superstition

740

00:32:11,480 --> 00:32:18,480

paranoia and scientific illiteracy all

741

00:32:15,839 --> 00:32:20,490

of that can be forgiven but the tactics

742
00:32:18,480 --> 00:32:22,650
they've used to spread their message of

743
00:32:20,490 --> 00:32:26,759
fear and doubt to unsuspecting parents

744
00:32:22,650 --> 00:32:28,530
are apparent it's true that we do enjoy

745
00:32:26,759 --> 00:32:31,430
freedom of speech in this country and

746
00:32:28,529 --> 00:32:33,960
I'm a fierce defender of that freedom

747
00:32:31,430 --> 00:32:36,750
but because of the potential for harm

748
00:32:33,960 --> 00:32:39,509
we've rules about misleading medical

749
00:32:36,750 --> 00:32:42,869
claims we regulate medicines and we

750
00:32:39,509 --> 00:32:47,210
regulate doctors in the case of the

751
00:32:42,869 --> 00:32:49,619
avian that regulation is not working for

752
00:32:47,210 --> 00:32:51,539
instance among the many complaints held

753
00:32:49,619 --> 00:32:53,909
against me story in a group the TGA

754
00:32:51,539 --> 00:32:56,759
ordered her to retract claims about a

755
00:32:53,910 --> 00:32:58,710
dodgy can secure called black salvo but

756
00:32:56,759 --> 00:33:02,460
she's not done that in violation of the

757
00:32:58,710 --> 00:33:04,799
TGA order well-meaning parents in this

758
00:33:02,460 --> 00:33:06,900
country who go in search in good faith

759
00:33:04,799 --> 00:33:09,029
for information on vaccines are

760
00:33:06,900 --> 00:33:11,670
confronted with avian propaganda and

761
00:33:09,029 --> 00:33:13,289
without knowing the background it's

762
00:33:11,670 --> 00:33:15,740
difficult for them to weigh the

763
00:33:13,289 --> 00:33:17,839
credibility of this information in

764
00:33:15,740 --> 00:33:20,940
comparison to the medical literature

765
00:33:17,839 --> 00:33:24,149
it's no wonder some parents are deciding

766
00:33:20,940 --> 00:33:25,798
to delay or forego vaccination but it

767
00:33:24,150 --> 00:33:28,169
could be a fatal decision

768
00:33:25,798 --> 00:33:30,569
and for that reason the avian need to be

769
00:33:28,169 --> 00:33:32,249
held to account I condemn them the

770

00:33:30,569 --> 00:33:43,710
Australian Greens condemn them in the

771
00:33:32,249 --> 00:33:45,569
Australian Senate condemns them the

772
00:33:43,710 --> 00:33:48,720
skeptical magazine the journal from

773
00:33:45,569 --> 00:33:50,939
Australian skeptics subscribe online to

774
00:33:48,720 --> 00:33:56,249
the world's second oldest skeptical

775
00:33:50,940 --> 00:33:59,009
magazine visit w WC apx com au and click

776
00:33:56,249 --> 00:34:02,970
the publication's league you can also

777
00:33:59,009 --> 00:34:06,298
find their over 30 years on back issues

778
00:34:02,970 --> 00:34:19,369
free to download the skeptical magazine

779
00:34:06,298 --> 00:34:21,829
from Australian skeptics here's may not

780
00:34:19,369 --> 00:34:24,940
spooky action

781
00:34:21,829 --> 00:34:24,940
at the distance

782
00:34:25,309 --> 00:34:29,489
ladies and gentlemen were talking to

783
00:34:27,059 --> 00:34:31,440
someone from the CSIRO we're talking to

784
00:34:29,489 --> 00:34:33,359

jonathan roberts now what is your

785

00:34:31,440 --> 00:34:37,470

relationship with the beautifully named

786

00:34:33,360 --> 00:34:40,860

autonomous research laboratory well i am

787

00:34:37,469 --> 00:34:44,309

the director of the research lab so the

788

00:34:40,860 --> 00:34:46,530

autonomous systems research lab is a lab

789

00:34:44,309 --> 00:34:50,039

up in Brisbane and we do think all

790

00:34:46,530 --> 00:34:52,680

robotic and autonomous system oh and

791

00:34:50,039 --> 00:34:54,539

what did you get your doctorate in oh I

792

00:34:52,679 --> 00:34:57,960

think got my doctorate in computer

793

00:34:54,539 --> 00:35:00,389

vision systems and what I have computed

794

00:34:57,960 --> 00:35:02,460

and what drew you to that and I guess

795

00:35:00,389 --> 00:35:04,289

that that's so they can do they can do

796

00:35:02,460 --> 00:35:07,230

all sorts of things where perception

797

00:35:04,289 --> 00:35:08,610

recognition 3d movement is that what

798

00:35:07,230 --> 00:35:11,610

attracted you to that that particular

799
00:35:08,610 --> 00:35:14,309
field absolutely yes I mean what really

800
00:35:11,610 --> 00:35:16,079
attracted me was being the movie star

801
00:35:14,309 --> 00:35:18,179
was getting all excited as a little

802
00:35:16,079 --> 00:35:21,569
kids and then as I went through

803
00:35:18,179 --> 00:35:24,210
University and for robot sort of vision

804
00:35:21,570 --> 00:35:26,039
was an interesting topic and trying to

805
00:35:24,210 --> 00:35:27,720
understand how you get a robot to see

806
00:35:26,039 --> 00:35:30,090
the world or the great research

807
00:35:27,719 --> 00:35:31,969
challenge and what still is the greatest

808
00:35:30,090 --> 00:35:34,380
challenge when it comes to a machine

809
00:35:31,969 --> 00:35:37,079
seeing the real world and working out

810
00:35:34,380 --> 00:35:40,829
what it is I think it's really this idea

811
00:35:37,079 --> 00:35:43,590
of perception of how you take camera

812
00:35:40,829 --> 00:35:46,440
images or images created by other

813
00:35:43,590 --> 00:35:48,960
devices like language and how you endow

814
00:35:46,440 --> 00:35:51,780
the Machine interpret water theme that

815
00:35:48,960 --> 00:35:54,300
is a real old problem we've we've got a

816
00:35:51,780 --> 00:35:57,060
few solutions to a few of a few things

817
00:35:54,300 --> 00:36:00,360
what area but not not that anything that

818
00:35:57,059 --> 00:36:02,190
could compete with a human in the area

819
00:36:00,360 --> 00:36:03,360
that you work in with the laser mapping

820
00:36:02,190 --> 00:36:05,550
that we're going to talk about in the

821
00:36:03,360 --> 00:36:07,890
moment and and with all robot and

822
00:36:05,550 --> 00:36:10,170
machine work is it very difficult to

823
00:36:07,889 --> 00:36:12,449
compete with love the powerhouses of yo

824
00:36:10,170 --> 00:36:14,430
California in the US and China and the

825
00:36:12,449 --> 00:36:18,059
UK how do we how do we fit up against

826
00:36:14,429 --> 00:36:20,159
them oh very well actually uh we we

827

00:36:18,059 --> 00:36:22,230
compete by getting people from woven

828
00:36:20,159 --> 00:36:24,899
world of course we don't have many

829
00:36:22,230 --> 00:36:26,750
people in Australia as other powerhouses

830
00:36:24,900 --> 00:36:29,880
but we can make up for that by

831
00:36:26,750 --> 00:36:33,179
attracting people here my laboratory has

832
00:36:29,880 --> 00:36:36,090
about 50 research stuff and probably 30

833
00:36:33,179 --> 00:36:38,190
of them come from around the world and

834
00:36:36,090 --> 00:36:38,789
we get the best and brightest bring them

835
00:36:38,190 --> 00:36:40,168
here

836
00:36:38,789 --> 00:36:42,059
of course they become Australian

837
00:36:40,168 --> 00:36:44,608
eventually because I love it so much and

838
00:36:42,059 --> 00:36:46,829
that's how we can compete and and what

839
00:36:44,608 --> 00:36:48,028
actually do the scientists like as most

840
00:36:46,829 --> 00:36:49,679
about this country is it something about

841
00:36:48,028 --> 00:36:51,929

the lifestyle they like going for a swim

842

00:36:49,679 --> 00:36:54,689

it's it's easy we tell better jokes what

843

00:36:51,929 --> 00:36:56,278

do they like about the country oh yeah

844

00:36:54,688 --> 00:36:58,469

the people we have here I mean they all

845

00:36:56,278 --> 00:37:00,929

love it very few of them ever go back to

846

00:36:58,469 --> 00:37:02,880

where I came from they love all of them

847

00:37:00,929 --> 00:37:04,588

so that they love is that I think I love

848

00:37:02,880 --> 00:37:07,739

the environment ramya they love the

849

00:37:04,588 --> 00:37:09,538

positivity it's it's a great place to do

850

00:37:07,739 --> 00:37:11,369

research and food technology work

851

00:37:09,539 --> 00:37:13,709

because people are so call design

852

00:37:11,369 --> 00:37:16,588

actually wants a doc new mitogenic thing

853

00:37:13,708 --> 00:37:18,418

what look now I have to ask you before

854

00:37:16,588 --> 00:37:20,518

we get on to the main product zebedee

855

00:37:18,418 --> 00:37:22,318

whereas i think is fantastic what is

856
00:37:20,518 --> 00:37:24,358
your what do you thinks the best example

857
00:37:22,318 --> 00:37:25,498
of computers in science fiction movie

858
00:37:24,358 --> 00:37:27,150
what's the one where you look at it and

859
00:37:25,498 --> 00:37:29,848
go well that's kind of getting towards

860
00:37:27,150 --> 00:37:33,449
what we could or might do well my

861
00:37:29,849 --> 00:37:35,999
favorite robot is the IND r2d2 from Star

862
00:37:33,449 --> 00:37:37,559
warranties cover my arrow a lot of

863
00:37:35,998 --> 00:37:39,688
people don't realize but those Star Wars

864
00:37:37,559 --> 00:37:42,839
movies really if they revolve around

865
00:37:39,688 --> 00:37:44,969
around our PVC it's all about him and

866
00:37:42,838 --> 00:37:46,558
he's kind of this great little robot

867
00:37:44,969 --> 00:37:48,749
that can do everything and what's the

868
00:37:46,559 --> 00:37:50,489
favor galaxy it definitely the one well

869
00:37:48,748 --> 00:37:52,438
I thought you might have gone from of a

870
00:37:50,489 --> 00:37:54,179
blade run a replicant kind of thing you

871
00:37:52,438 --> 00:37:56,098
know with the very advanced robot the

872
00:37:54,179 --> 00:37:59,159
can't be taught to top apart from a

873
00:37:56,099 --> 00:38:01,229
human they're been scary yeah yeah and

874
00:37:59,159 --> 00:38:02,880
do you think that is as we if you try

875
00:38:01,228 --> 00:38:04,558
and make a robot a bit too much like a

876
00:38:02,880 --> 00:38:06,719
human and you don't quite get it right

877
00:38:04,559 --> 00:38:08,369
it looks a bit eerie doesn't it it does

878
00:38:06,719 --> 00:38:10,679
and there's an official term for that

879
00:38:08,369 --> 00:38:12,599
it's called the uncanny valley which is

880
00:38:10,679 --> 00:38:14,818
this this idea that when you get a

881
00:38:12,599 --> 00:38:16,650
little bit you know if something's

882
00:38:14,818 --> 00:38:18,538
perfect it's okay and if something's

883
00:38:16,650 --> 00:38:20,219
really different it's okay but if it's

884

00:38:18,539 --> 00:38:22,380
been that between between stay where

885
00:38:20,219 --> 00:38:24,719
it's getting a bit realistic but it's

886
00:38:22,380 --> 00:38:26,489
just um camera it's not quite right yeah

887
00:38:24,719 --> 00:38:28,409
I've heard this they have this effect

888
00:38:26,489 --> 00:38:30,179
with video games and video games are

889
00:38:28,409 --> 00:38:32,338
almost looking to reel you get the

890
00:38:30,179 --> 00:38:34,108
uncanny valley effect where it's almost

891
00:38:32,338 --> 00:38:35,608
a put off because the Bloods looking to

892
00:38:34,108 --> 00:38:37,139
reel is like you really are shooting

893
00:38:35,608 --> 00:38:39,028
someone yeah that's right exactly right

894
00:38:37,139 --> 00:38:40,858
it's the same with robots so you have to

895
00:38:39,028 --> 00:38:43,168
have to think about that stuff with you

896
00:38:40,858 --> 00:38:45,119
when you make a design robot well what

897
00:38:43,168 --> 00:38:47,009
you've been making and designing at the

898
00:38:45,119 --> 00:38:50,400

research laboratory there for the CSIRO

899

00:38:47,009 --> 00:38:52,438

is a laser 3d mapping equipment called

900

00:38:50,400 --> 00:38:52,650

Zebedee explain it to us and what sort

901

00:38:52,438 --> 00:38:54,808

of you

902

00:38:52,650 --> 00:38:57,389

users would have yes so this equipment

903

00:38:54,809 --> 00:38:59,039

was originally built for robots so that

904

00:38:57,389 --> 00:39:01,588

as I move around the environment they

905

00:38:59,039 --> 00:39:03,630

can app the world and our researchers

906

00:39:01,588 --> 00:39:07,558

realize that humans could also use it

907

00:39:03,630 --> 00:39:11,519

though it did the system that can be

908

00:39:07,559 --> 00:39:12,960

used to as you walk around you wave sort

909

00:39:11,519 --> 00:39:15,119

of it's like a magic wok that has a

910

00:39:12,960 --> 00:39:17,970

laser scanner on the end of a little

911

00:39:15,119 --> 00:39:20,039

handle it's on the end of the spring and

912

00:39:17,969 --> 00:39:22,078

you walk around an environment you could

913
00:39:20,039 --> 00:39:24,000
walk around buildings or a forest point

914
00:39:22,079 --> 00:39:26,789
anywhere you want the map and it

915
00:39:24,000 --> 00:39:29,028
actually acts the whole world in quite a

916
00:39:26,789 --> 00:39:31,260
lot of detail sort of about a centimeter

917
00:39:29,028 --> 00:39:33,539
level of detail and in that bit of

918
00:39:31,260 --> 00:39:36,960
started you can walk around so you can

919
00:39:33,539 --> 00:39:38,278
go and map a historic sites which are

920
00:39:36,960 --> 00:39:40,920
we've done a number of those or you

921
00:39:38,278 --> 00:39:42,869
could map cave we've mapped you know and

922
00:39:40,920 --> 00:39:44,639
came from the Blue Mountain you can

923
00:39:42,869 --> 00:39:48,059
check that all the mapping information

924
00:39:44,639 --> 00:39:51,298
do it will then because it's very fast

925
00:39:48,059 --> 00:39:53,430
moving to you and then you can load that

926
00:39:51,298 --> 00:39:56,369
into you know whatever computer

927
00:39:53,429 --> 00:39:59,038
modelling package you might use to

928
00:39:56,369 --> 00:40:00,630
actually do your work and what's the

929
00:39:59,039 --> 00:40:02,309
range of it because obviously a laser

930
00:40:00,630 --> 00:40:04,588
can potentially go on infinitely

931
00:40:02,309 --> 00:40:06,150
depending on how its weaknesses how high

932
00:40:04,588 --> 00:40:08,190
can you map if you're in a very tall

933
00:40:06,150 --> 00:40:10,318
room or outdoors I've seen it being used

934
00:40:08,190 --> 00:40:12,599
in the bush that's right so there later

935
00:40:10,318 --> 00:40:17,028
they typically work ones were you what's

936
00:40:12,599 --> 00:40:20,369
about 20 meters and really there is

937
00:40:17,028 --> 00:40:24,420
keeping related nice and low power over

938
00:40:20,369 --> 00:40:26,010
it completely I safe yes what's the

939
00:40:24,420 --> 00:40:27,150
limit of the power of the laser you can

940
00:40:26,010 --> 00:40:29,460
have on something that's just waving

941

00:40:27,150 --> 00:40:31,710
around at an angle in public and that

942
00:40:29,460 --> 00:40:33,000
you can probably is from the it decay

943
00:40:31,710 --> 00:40:34,380
all depends of course on the amount of

944
00:40:33,000 --> 00:40:37,260
energy coming out the laser but we

945
00:40:34,380 --> 00:40:39,000
typically see lasers that will work up

946
00:40:37,260 --> 00:40:42,299
to a couple of hundred meters that are

947
00:40:39,000 --> 00:40:44,190
so-called I safe but those ones that are

948
00:40:42,298 --> 00:40:46,380
much have those great arranger tend to

949
00:40:44,190 --> 00:40:49,260
be fought yet larger bigger and bulkier

950
00:40:46,380 --> 00:40:51,180
so the small ones for hand they all go

951
00:40:49,260 --> 00:40:52,890
to about 20 meters the first thing I

952
00:40:51,179 --> 00:40:55,139
thought when I saw this and you have to

953
00:40:52,889 --> 00:40:58,199
tell us a lot about meez I thought dance

954
00:40:55,139 --> 00:41:00,358
parties if everybody at a dance party

955
00:40:58,199 --> 00:41:02,338

had one of these in a blackened room

956

00:41:00,358 --> 00:41:06,389

with a smoke machine going it would be

957

00:41:02,338 --> 00:41:07,528

awesome yes I can defeat and

958

00:41:06,389 --> 00:41:08,670

come on I mean you must have some good

959

00:41:07,528 --> 00:41:11,099

Christmas parties where you let the

960

00:41:08,670 --> 00:41:12,809

lasers go in the lab come on well then

961

00:41:11,099 --> 00:41:15,000

they're actually not visible so these

962

00:41:12,809 --> 00:41:17,670

losers are all they're all near infrared

963

00:41:15,000 --> 00:41:19,858

if we can't quite see them our eyesight

964

00:41:17,670 --> 00:41:21,599

aren't quite seeing that frequently and

965

00:41:19,858 --> 00:41:23,190

this is where mining would come in handy

966

00:41:21,599 --> 00:41:24,420

to you could do it as often as you like

967

00:41:23,190 --> 00:41:28,139

and you can tell if there's been is

968

00:41:24,420 --> 00:41:30,298

shift in the earth exactly right and is

969

00:41:28,139 --> 00:41:33,210

a probable youth in underground mining

970
00:41:30,298 --> 00:41:35,579
as an issue called tunnel convergence

971
00:41:33,210 --> 00:41:37,829
where tunnels of court would be they

972
00:41:35,579 --> 00:41:39,750
often shrinks and get narrower over time

973
00:41:37,829 --> 00:41:42,510
and that we are the weight of the earth

974
00:41:39,750 --> 00:41:46,528
of government loosen and core final life

975
00:41:42,510 --> 00:41:48,240
monitor that there is going and I must

976
00:41:46,528 --> 00:41:49,980
explain people how it's used again you

977
00:41:48,239 --> 00:41:52,108
walk along you hold it at about chest

978
00:41:49,980 --> 00:41:54,690
height it's on a spring so the walking

979
00:41:52,108 --> 00:41:56,730
motion starts moving a laser around and

980
00:41:54,690 --> 00:41:57,838
that's how it does its mapping and what

981
00:41:56,730 --> 00:42:00,179
country do you think would like it

982
00:41:57,838 --> 00:42:01,469
obviously mining in Australia who has

983
00:42:00,179 --> 00:42:02,639
the money when it comes to this kind of

984
00:42:01,469 --> 00:42:04,048
thing who do you normally pitch to

985
00:42:02,639 --> 00:42:06,210
everyone would think of automatically

986
00:42:04,048 --> 00:42:09,210
Americans or Chinese but is there some

987
00:42:06,210 --> 00:42:11,548
other market we forget about well it's I

988
00:42:09,210 --> 00:42:13,259
I think I think this will have roiled

989
00:42:11,548 --> 00:42:15,480
wide appeal it's currently been

990
00:42:13,259 --> 00:42:18,949
commercialized by a company based in the

991
00:42:15,480 --> 00:42:21,659
UK who of course sell it internationally

992
00:42:18,949 --> 00:42:24,239
and but I think I really think this will

993
00:42:21,659 --> 00:42:26,399
be a worldwide productive it can be used

994
00:42:24,239 --> 00:42:27,659
to map I don't anything and jonathan

995
00:42:26,400 --> 00:42:28,920
roberts is someone who knows the

996
00:42:27,659 --> 00:42:31,828
industry and the technology industry

997
00:42:28,920 --> 00:42:32,849
someone might be about to go into union

998

00:42:31,829 --> 00:42:34,470
they're not quite sure that when they

999
00:42:32,849 --> 00:42:36,028
might do chemistry they might do physics

1000
00:42:34,469 --> 00:42:38,818
what would you recommend they get into

1001
00:42:36,028 --> 00:42:41,338
for the future boom area of Australian

1002
00:42:38,818 --> 00:42:43,159
technology so in this hot this whole

1003
00:42:41,338 --> 00:42:45,538
area of robotics is actually quite

1004
00:42:43,159 --> 00:42:48,088
multi-disciplinary which is very good so

1005
00:42:45,539 --> 00:42:50,849
we have people working who are

1006
00:42:48,088 --> 00:42:53,130
mathematicians the electrical engineers

1007
00:42:50,849 --> 00:42:55,318
Mechanical Engineering we have physicist

1008
00:42:53,130 --> 00:42:57,750
myself I'm actually an aerospace

1009
00:42:55,318 --> 00:43:00,028
engineer / either the university my

1010
00:42:57,750 --> 00:43:02,190
first degree and there's a new breed of

1011
00:43:00,028 --> 00:43:05,150
engineers called mechatronic engineers

1012
00:43:02,190 --> 00:43:07,619

as a number of universes sorry narrative

1013

00:43:05,150 --> 00:43:10,829

mechatronic as a ninja going to bring up

1014

00:43:07,619 --> 00:43:13,259

confusion between mechanical electrical

1015

00:43:10,829 --> 00:43:17,039

and electronic engineering so kind of

1016

00:43:13,259 --> 00:43:20,280

that whole broad range of engineering i

1017

00:43:17,039 --> 00:43:21,570

think would be great thing

1018

00:43:20,280 --> 00:43:23,640

thank you very much for your time today

1019

00:43:21,570 --> 00:43:24,900

and as an Aeronautics engineer again we

1020

00:43:23,639 --> 00:43:26,549

can get inside what's your favorite

1021

00:43:24,900 --> 00:43:28,619

plane ever I'm a bit of a fan of the

1022

00:43:26,550 --> 00:43:30,420

adore Obama the first-ever jet bomber

1023

00:43:28,619 --> 00:43:32,369

the Germans made I liked it it was back

1024

00:43:30,420 --> 00:43:33,659

bit weird what's your favorite aeroplane

1025

00:43:32,369 --> 00:43:36,509

ever as someone who knows about

1026

00:43:33,659 --> 00:43:38,879

aeronautics back the Maquis tags from

1027
00:43:36,510 --> 00:43:43,320
Iowa what was that purely because it was

1028
00:43:38,880 --> 00:43:44,820
made of wood yes that's like exactly oh

1029
00:43:43,320 --> 00:43:45,900
boy yeah well you just wouldn't think

1030
00:43:44,820 --> 00:43:48,870
okay let's make something groundbreaking

1031
00:43:45,900 --> 00:43:50,880
I let you some wood for it you clearly

1032
00:43:48,869 --> 00:43:52,650
know your aircraft on correct oh I just

1033
00:43:50,880 --> 00:43:54,240
slept too late watching people fight

1034
00:43:52,650 --> 00:43:56,880
Germans on television you should intend

1035
00:43:54,239 --> 00:43:58,619
to pick up this sort of knowledge look

1036
00:43:56,880 --> 00:44:00,030
Jonathan Roberts thanks for trying to us

1037
00:43:58,619 --> 00:44:01,440
and where can people what website can

1038
00:44:00,030 --> 00:44:03,480
people go to to find out more about

1039
00:44:01,440 --> 00:44:05,340
Zebedee in this 3d mapping system and

1040
00:44:03,480 --> 00:44:07,679
what you get up to it the autonomous

1041
00:44:05,340 --> 00:44:10,710
research laboratory I love that name so

1042
00:44:07,679 --> 00:44:15,179
if you just go to zero dot a you we have

1043
00:44:10,710 --> 00:44:17,699
a very simple website address / ASL on

1044
00:44:15,179 --> 00:44:20,879
the AFL fence the autonomous systems lab

1045
00:44:17,699 --> 00:44:22,409
so there's our over a new / AFL and

1046
00:44:20,880 --> 00:44:24,780
you're found or thoughtful well

1047
00:44:22,409 --> 00:44:26,099
interesting research well thank you for

1048
00:44:24,780 --> 00:44:27,990
talking to us from the autonomous

1049
00:44:26,099 --> 00:44:32,089
systems lab today jonathan roberts

1050
00:44:27,989 --> 00:44:32,089
you're welcome thank you having me

1051
00:44:42,338 --> 00:44:48,219
in a world where the truth is a matter

1052
00:44:50,500 --> 00:44:56,010
we're messages are a scene for beyond

1053
00:44:53,559 --> 00:44:56,009
the moon

1054
00:44:58,400 --> 00:45:04,059
and reason is sidelined for magical

1055

00:45:01,760 --> 00:45:04,059
thinking

1056
00:45:04,469 --> 00:45:13,379
oh please read them stand between the

1057
00:45:06,809 --> 00:45:14,940
truth what date is it 78 several thing

1058
00:45:13,380 --> 00:45:16,320
this is impressive it's beating our

1059
00:45:14,940 --> 00:45:18,380
system present they're not their

1060
00:45:16,320 --> 00:45:21,359
photographs of Chinese anthem it's not

1061
00:45:18,380 --> 00:45:23,190
we are not well received is a good guard

1062
00:45:21,358 --> 00:45:25,199
we're fully don't discuss cryptozoology

1063
00:45:23,190 --> 00:45:27,150
on the show very often because we don't

1064
00:45:25,199 --> 00:45:29,009
know anything about how the truth the

1065
00:45:27,150 --> 00:45:30,720
price gets lower and lower and lower and

1066
00:45:29,010 --> 00:45:35,310
then he hits the ceiling it's just even

1067
00:45:30,719 --> 00:45:37,139
for the rumba more skeptic to the K for

1068
00:45:35,309 --> 00:45:41,299
the Most High skeptics society find us

1069
00:45:37,139 --> 00:45:41,299

on iTunes or you know don't

1070

00:45:51,289 --> 00:45:57,119

thank you for listening to the skeptic

1071

00:45:53,849 --> 00:45:59,610

zone well it's time for me to get the

1072

00:45:57,119 --> 00:46:00,869

suitcase out of the cupboard it hasn't

1073

00:45:59,610 --> 00:46:02,670

been in there for long get the suitcase

1074

00:46:00,869 --> 00:46:04,889

out of the cupboard start packing my

1075

00:46:02,670 --> 00:46:06,720

bits and pieces for my trip to

1076

00:46:04,889 --> 00:46:09,269

California or I'll be spending a few

1077

00:46:06,719 --> 00:46:12,509

days in the Bay Area then after that on

1078

00:46:09,269 --> 00:46:14,099

to the amazing meeting in Las Vegas one

1079

00:46:12,510 --> 00:46:16,650

of the highlights of my year to be sure

1080

00:46:14,099 --> 00:46:18,480

and I do look forward to catching up

1081

00:46:16,650 --> 00:46:20,849

with lots of friends I only get to see

1082

00:46:18,480 --> 00:46:24,269

once or twice a year if I'm lucky that's

1083

00:46:20,849 --> 00:46:26,309

a I think apart from the wonderful talks

1084
00:46:24,269 --> 00:46:29,280
i'll be attending and hearing and the

1085
00:46:26,309 --> 00:46:31,559
events i think catching up with good and

1086
00:46:29,280 --> 00:46:34,740
dear friends is one of the highlights of

1087
00:46:31,559 --> 00:46:37,019
the amazing meeting for me so next

1088
00:46:34,739 --> 00:46:39,959
week's program will be coming to you

1089
00:46:37,019 --> 00:46:42,150
from the bay area in in california I

1090
00:46:39,960 --> 00:46:44,429
wonder what interesting things I can

1091
00:46:42,150 --> 00:46:47,360
discover there well I hope to be

1092
00:46:44,429 --> 00:46:49,889
catching up with our dear friend dr.

1093
00:46:47,360 --> 00:46:53,370
Eugenie Scott from the National Center

1094
00:46:49,889 --> 00:46:55,769
science education in Oakland always

1095
00:46:53,369 --> 00:46:58,079
worth a visit so until next week this is

1096
00:46:55,769 --> 00:47:03,960
Richard Saunders signing off from Sydney

1097
00:46:58,079 --> 00:47:05,690
Australia you've been listening to the

1098
00:47:03,960 --> 00:47:10,490
skeptics are

1099
00:47:05,690 --> 00:47:13,550
visit our website at [www skeptics](http://www.skeptics.org) on TV

1100
00:47:10,489 --> 00:47:16,179
for comments contacts and extra video

1101
00:47:13,550 --> 00:47:16,180
reports

1102
00:47:19,280 --> 00:47:21,340
you