

1
00:00:05,940 --> 00:00:13,699
welcome to the skeptic zone the podcast

2
00:00:09,089 --> 00:00:13,699
from Australia for science and reason

3
00:00:22,368 --> 00:00:29,609
hello and welcome to the skeptics own

4
00:00:25,439 --> 00:00:33,090
podcast episode number 409 for the 21st

5
00:00:29,609 --> 00:00:35,460
of august 2016 Heidi Robertson here

6
00:00:33,090 --> 00:00:39,620
filling in for Richard Saunders who's

7
00:00:35,460 --> 00:00:42,689
not feeling so crash hot today I'm sorry

8
00:00:39,619 --> 00:00:45,780
coming up more from the Brisbane skeptic

9
00:00:42,689 --> 00:00:47,369
camp and an interview with Enric a who

10
00:00:45,780 --> 00:00:50,908
talks about the real dunning-kruger

11
00:00:47,369 --> 00:00:53,878
effect no not Brian Dunning from the

12
00:00:50,908 --> 00:00:56,219
sceptile cast this is the effect where

13
00:00:53,878 --> 00:00:59,280
unskilled people tend to overestimate

14
00:00:56,219 --> 00:01:02,308
their abilities it's not as many people

15
00:00:59,280 --> 00:01:06,030
think people who are too stupid to know

16
00:01:02,308 --> 00:01:08,429
how stupid they are after that we join

17
00:01:06,030 --> 00:01:10,950
Maynard and Richard at the Australian

18
00:01:08,430 --> 00:01:12,590
Museum in Sydney as they get ready to

19
00:01:10,950 --> 00:01:15,030
perform the mystery investigators

20
00:01:12,590 --> 00:01:18,868
science show as part of the ongoing

21
00:01:15,030 --> 00:01:22,109
science week outreach program may not

22
00:01:18,868 --> 00:01:24,868
also chats with Katherine be hag who is

23
00:01:22,109 --> 00:01:27,090
the manager of the festival and visits

24
00:01:24,868 --> 00:01:30,299
the booth of the university of

25
00:01:27,090 --> 00:01:34,380
technology to find out about extreme

26
00:01:30,299 --> 00:01:36,329
magnification with Alison this report

27
00:01:34,379 --> 00:01:41,339
will be of particular interest to

28
00:01:36,328 --> 00:01:44,998
teachers but now it's time for me to run

29

00:01:41,340 --> 00:01:48,409
to the kitchen and make my kids some

30
00:01:44,998 --> 00:01:52,349
lunch I think they have requested

31
00:01:48,409 --> 00:01:57,170
toasted cheese sandwiches while I do

32
00:01:52,349 --> 00:01:57,169
that I hope you enjoy the skeptic zone

33
00:02:15,370 --> 00:02:29,030
it's the raw skeptic report with Heidi

34
00:02:19,340 --> 00:02:30,199
Robertson okay who've we got here what

35
00:02:29,030 --> 00:02:32,689
are you doing at skeptic aunt what's

36
00:02:30,199 --> 00:02:36,500
your name my name is Enrico Bustamante I

37
00:02:32,689 --> 00:02:39,680
did a short presentation on the actual

38
00:02:36,500 --> 00:02:42,199
dunning-kruger effect and comparative

39
00:02:39,680 --> 00:02:44,780
comparing it to what people tend to

40
00:02:42,199 --> 00:02:47,539
think it is okay so first of all tell us

41
00:02:44,780 --> 00:02:49,580
what your experience has been that what

42
00:02:47,539 --> 00:02:52,340
do people generally think the definition

43
00:02:49,580 --> 00:02:54,830

of the dunning-kruger effect is that the

44

00:02:52,340 --> 00:02:56,599

that people that are too stupid to know

45

00:02:54,830 --> 00:02:58,370

that they're stupid cannot tell that

46

00:02:56,599 --> 00:03:00,650

they are stupid now tell us the correct

47

00:02:58,370 --> 00:03:02,299

meaning of the dunning-kruger effect off

48

00:03:00,650 --> 00:03:05,780

the top of my head the nearest I can

49

00:03:02,299 --> 00:03:09,040

come up with is that those who are

50

00:03:05,780 --> 00:03:12,219

relatively unskilled in a specific thing

51

00:03:09,039 --> 00:03:14,629

tend to suffer illusory superiority

52

00:03:12,219 --> 00:03:16,069

regarding their ability in that

53

00:03:14,629 --> 00:03:19,549

particular thing that is being brought

54

00:03:16,069 --> 00:03:22,939

into question okay so you think the the

55

00:03:19,549 --> 00:03:24,439

whole definition that most people think

56

00:03:22,939 --> 00:03:26,569

that the dunning-kruger effect is that

57

00:03:24,439 --> 00:03:29,629

the people are too stupid to know that

58
00:03:26,569 --> 00:03:32,269
they're stupid is is too simplistic as

59
00:03:29,629 --> 00:03:35,810
was North most things yes it's also very

60
00:03:32,269 --> 00:03:38,180
catchy and sexy for the media and when

61
00:03:35,810 --> 00:03:39,849
you think about if you say well they're

62
00:03:38,180 --> 00:03:44,329
too stupid to know that they're stupid

63
00:03:39,849 --> 00:03:46,699
it also reinforces the whole a positive

64
00:03:44,329 --> 00:03:49,909
message for me they are not as good as I

65
00:03:46,699 --> 00:03:52,129
am so it's more it's a lot catchier it's

66
00:03:49,909 --> 00:03:53,750
not as complicated and you don't have to

67
00:03:52,129 --> 00:03:55,759
think about it too much which is why I

68
00:03:53,750 --> 00:03:58,030
tends to kind of be a good meme that

69
00:03:55,759 --> 00:04:00,560
latches on to people and spreads and

70
00:03:58,030 --> 00:04:02,989
sadly it doesn't give us the real

71
00:04:00,560 --> 00:04:04,459
picture of what tends to happen with

72
00:04:02,989 --> 00:04:06,459
people and that has nothing to do with

73
00:04:04,459 --> 00:04:09,769
intelligence just skill and experience

74
00:04:06,459 --> 00:04:11,870
can you tell us a bit of the history of

75
00:04:09,769 --> 00:04:16,399
who Dunning and Kruger were and how

76
00:04:11,870 --> 00:04:17,120
that phrase came about not much I do

77
00:04:16,399 --> 00:04:19,899
know that we

78
00:04:17,120 --> 00:04:23,629
the paper that they submitted in 1998

79
00:04:19,899 --> 00:04:26,750
David Dunning was a research

80
00:04:23,629 --> 00:04:28,790
psychologist if i recall correctly and I

81
00:04:26,750 --> 00:04:31,639
forget his name mr. Krueger was his

82
00:04:28,790 --> 00:04:33,800
undergrad student who his research

83
00:04:31,639 --> 00:04:35,210
student under him and they did a study

84
00:04:33,800 --> 00:04:38,660
which they looked at several different

85
00:04:35,209 --> 00:04:41,209
things including humor and something

86

00:04:38,660 --> 00:04:43,970
more concrete which was grammar and they

87
00:04:41,209 --> 00:04:46,159
had look at how people measured how good

88
00:04:43,970 --> 00:04:48,919
they thought they were how well they

89
00:04:46,160 --> 00:04:51,830
tested and how well they thought they

90
00:04:48,918 --> 00:04:53,750
did at the test and the lower half

91
00:04:51,829 --> 00:04:56,240
especially the lower quarter of people

92
00:04:53,750 --> 00:04:57,889
thought they were quite good and that

93
00:04:56,240 --> 00:05:01,389
they did quite well on the test when in

94
00:04:57,889 --> 00:05:03,590
reality their results were appalling

95
00:05:01,389 --> 00:05:07,060
very interesting because you do see it a

96
00:05:03,589 --> 00:05:11,388
lot that phrase in skeptic circles and

97
00:05:07,060 --> 00:05:13,610
it's interesting to have heard your your

98
00:05:11,389 --> 00:05:15,350
own experiences regarding the

99
00:05:13,610 --> 00:05:17,449
dunning-kruger effect that you spoke of

100
00:05:15,350 --> 00:05:20,229

in your talk yesterday can you take us

101

00:05:17,449 --> 00:05:23,270

through that when you first began work

102

00:05:20,228 --> 00:05:24,918

yes but it was during a practical

103

00:05:23,269 --> 00:05:28,759

experience during my university studies

104

00:05:24,918 --> 00:05:31,399

as a teacher I went to a school that is

105

00:05:28,759 --> 00:05:34,279

not particularly low socio-economic but

106

00:05:31,399 --> 00:05:38,029

as far as student behavior is concerned

107

00:05:34,279 --> 00:05:40,339

is quite rough and I was given to a

108

00:05:38,029 --> 00:05:42,879

mentor teacher who was one of the best

109

00:05:40,339 --> 00:05:46,728

in the school at behavior management and

110

00:05:42,879 --> 00:05:48,918

thus she had the rougher classes and I

111

00:05:46,728 --> 00:05:52,339

went in thinking I can do this I'm going

112

00:05:48,918 --> 00:05:54,769

to be perfectly fine I I am a genius i

113

00:05:52,339 --> 00:05:56,899

can manage its no problem and i almost

114

00:05:54,769 --> 00:06:00,589

felt my practical because of that at one

115
00:05:56,899 --> 00:06:02,329
point leaving the school i had the

116
00:06:00,589 --> 00:06:04,369
thought to myself i have no bleeping

117
00:06:02,329 --> 00:06:05,990
clue what I'm doing because i honestly

118
00:06:04,370 --> 00:06:10,310
didn't i did not have the necessary

119
00:06:05,990 --> 00:06:11,750
experience or knowledge to do what I

120
00:06:10,310 --> 00:06:13,189
needed to do in that classroom and keep

121
00:06:11,750 --> 00:06:15,709
the students from killing each other or

122
00:06:13,189 --> 00:06:18,769
myself but that takes a quite a lot of

123
00:06:15,709 --> 00:06:22,759
insight into yourself to to realize that

124
00:06:18,769 --> 00:06:25,759
and and then to take steps to to fix it

125
00:06:22,759 --> 00:06:27,769
so to speak wouldn't you say it does

126
00:06:25,759 --> 00:06:30,110
take a lot it is quite possible to go

127
00:06:27,769 --> 00:06:31,039
into a spiral of self-doubt where you

128
00:06:30,110 --> 00:06:33,889
think

129
00:06:31,040 --> 00:06:36,470
do I know enough am i deluding myself

130
00:06:33,889 --> 00:06:38,089
into thinking I'm better than I am am i

131
00:06:36,470 --> 00:06:40,790
deluding myself into thinking I'm not

132
00:06:38,089 --> 00:06:42,139
good enough and you kind of have to work

133
00:06:40,790 --> 00:06:43,970
your way out of it I haven't actually

134
00:06:42,139 --> 00:06:45,529
read the research on that particular

135
00:06:43,970 --> 00:06:47,570
side of things but it is something that

136
00:06:45,529 --> 00:06:50,000
can happen but you do need to be able to

137
00:06:47,569 --> 00:06:52,730
look at yourself and think do I need to

138
00:06:50,000 --> 00:06:54,350
go to someone who knows better yeah

139
00:06:52,730 --> 00:06:56,150
definitely and I think that's a big part

140
00:06:54,350 --> 00:06:59,410
of what skepticism is isn't it it's

141
00:06:56,149 --> 00:07:02,120
recognizing that you don't know

142
00:06:59,410 --> 00:07:04,670
everything and also referring to the

143

00:07:02,120 --> 00:07:08,030
professionals in their field because

144
00:07:04,670 --> 00:07:12,140
that is their area of expertise exactly

145
00:07:08,029 --> 00:07:14,719
especially and that's why I wanted to do

146
00:07:12,139 --> 00:07:17,120
make do my talk he is simplifying it to

147
00:07:14,720 --> 00:07:19,430
their that the stupid the stupid are too

148
00:07:17,120 --> 00:07:22,899
stupid to know that they're stupid takes

149
00:07:19,430 --> 00:07:26,569
away from the actual meaning of it words

150
00:07:22,899 --> 00:07:29,329
you have this space to learn you need to

151
00:07:26,569 --> 00:07:31,550
be able to identify when you need to go

152
00:07:29,329 --> 00:07:33,319
and get help when when you should say I

153
00:07:31,550 --> 00:07:34,910
don't know I don't know enough to ask

154
00:07:33,319 --> 00:07:35,990
the right question I don't know enough

155
00:07:34,910 --> 00:07:40,160
to actually be able to do this correctly

156
00:07:35,990 --> 00:07:42,460
and simplifying it to it being about

157
00:07:40,160 --> 00:07:45,290

intelligence doesn't help either because

158

00:07:42,459 --> 00:07:48,739

intelligence is not a quantifiable thing

159

00:07:45,290 --> 00:07:50,300

and so that that whole experience that

160

00:07:48,740 --> 00:07:55,129

you had in the classroom that you

161

00:07:50,300 --> 00:07:58,100

described yesterday it did seem to be

162

00:07:55,129 --> 00:08:00,920

quite traumatic for you but also it kind

163

00:07:58,100 --> 00:08:03,920

of it appeared to be an epiphany for you

164

00:08:00,920 --> 00:08:07,819

in a way as well so what did you do in

165

00:08:03,920 --> 00:08:11,480

order to to learn what you had to do to

166

00:08:07,819 --> 00:08:14,379

get a classroom under control I learned

167

00:08:11,480 --> 00:08:19,430

to listen a lot more than I used to I

168

00:08:14,379 --> 00:08:21,439

went from thinking of everything as a

169

00:08:19,430 --> 00:08:23,780

suggestion to actually listening to

170

00:08:21,439 --> 00:08:28,579

expert advice and considering it expert

171

00:08:23,779 --> 00:08:31,369

advice and not simply arguing but trying

172
00:08:28,579 --> 00:08:33,019
to frame any argument as to why should I

173
00:08:31,370 --> 00:08:34,279
do this thing this way why should I

174
00:08:33,019 --> 00:08:37,668
consider it in the way you are telling

175
00:08:34,279 --> 00:08:40,668
me to can you maybe asking for

176
00:08:37,668 --> 00:08:42,228
clarification on the reasons for the

177
00:08:40,668 --> 00:08:44,449
expert advice and suggestions if I

178
00:08:42,229 --> 00:08:47,150
didn't understand why

179
00:08:44,450 --> 00:08:49,070
and also going it to a point where I am

180
00:08:47,149 --> 00:08:51,919
much more comfortable now admitting to

181
00:08:49,070 --> 00:08:55,520
myself I don't know enough there is more

182
00:08:51,919 --> 00:08:58,939
to learn and not skipping on anything

183
00:08:55,519 --> 00:09:02,929
someone who might know more than I will

184
00:08:58,940 --> 00:09:05,120
say and just as far as my own experience

185
00:09:02,929 --> 00:09:07,699
goes with people I i tend to respect

186
00:09:05,120 --> 00:09:10,789
people much more if they are able to

187
00:09:07,700 --> 00:09:13,370
take that step back and say I I don't

188
00:09:10,789 --> 00:09:16,189
know instead of making something up or

189
00:09:13,370 --> 00:09:18,679
pretending that they do know everything

190
00:09:16,190 --> 00:09:21,350
even if it is in their own area of

191
00:09:18,679 --> 00:09:25,819
expertise there's always something that

192
00:09:21,350 --> 00:09:28,700
you don't know very much so and sadly as

193
00:09:25,820 --> 00:09:31,430
Cassandra pointed out yesterday it can

194
00:09:28,700 --> 00:09:33,350
be a matter of ego some people aren't

195
00:09:31,429 --> 00:09:35,120
resilient enough or haven't trained

196
00:09:33,350 --> 00:09:36,889
themselves to be resilient enough to be

197
00:09:35,120 --> 00:09:38,600
able to take that hit or to their ego

198
00:09:36,889 --> 00:09:41,110
and admit in front of someone else or

199
00:09:38,600 --> 00:09:44,029
even to themselves now I don't know in

200

00:09:41,110 --> 00:09:47,769
whatever form that's going to take it

201
00:09:44,029 --> 00:09:52,669
takes a level of maturity do you think

202
00:09:47,769 --> 00:09:53,960
maturity yes and a lot of the tools that

203
00:09:52,669 --> 00:09:55,849
we skeptics use a lot of the

204
00:09:53,960 --> 00:09:58,310
metacognitive tools about being able to

205
00:09:55,850 --> 00:10:01,490
think and about how we think and process

206
00:09:58,309 --> 00:10:04,879
the information that we have well it was

207
00:10:01,490 --> 00:10:07,279
a very very good talk yesterday and

208
00:10:04,879 --> 00:10:09,230
thank you for your time on the skeptic

209
00:10:07,279 --> 00:10:11,419
zone I hope to see what more skeptics

210
00:10:09,230 --> 00:10:13,990
events in the future was my pleasure and

211
00:10:11,419 --> 00:10:13,990
thank you very much

212
00:10:16,600 --> 00:10:23,449
hello everyone Heidi Robertson here

213
00:10:20,499 --> 00:10:28,159
every single day in the United States

214
00:10:23,448 --> 00:10:31,278

alone 22 ex servicemen and women take

215

00:10:28,159 --> 00:10:34,578

their own lives you may have seen a

216

00:10:31,278 --> 00:10:38,198

social media campaign found on twitter

217

00:10:34,578 --> 00:10:40,998

with the hashtag 22 push up challenge

218

00:10:38,198 --> 00:10:44,298

the idea is to raise awareness of the

219

00:10:40,999 --> 00:10:47,989

impact of PTSD post-traumatic stress

220

00:10:44,298 --> 00:10:52,058

disorder and suicide of the troops by

221

00:10:47,989 --> 00:10:55,339

during 22 push-ups every day for 22 days

222

00:10:52,058 --> 00:11:00,019

filming yourself and uploading it to

223

00:10:55,339 --> 00:11:02,269

social media each of those 22 days the

224

00:11:00,019 --> 00:11:05,989

idea is to nominate someone else to take

225

00:11:02,269 --> 00:11:09,350

up the challenge currently I'm at day 10

226

00:11:05,989 --> 00:11:12,259

of my 22 day challenge and feeling

227

00:11:09,350 --> 00:11:14,119

pretty saw a minor complaint compared

228

00:11:12,259 --> 00:11:18,289

with the pain and anguish of our

229
00:11:14,119 --> 00:11:22,269
veterans and their families today as I

230
00:11:18,289 --> 00:11:25,778
record on the 18th of August 2016 is

231
00:11:22,269 --> 00:11:28,938
Vietnam veterans day in Australia

232
00:11:25,778 --> 00:11:32,509
Australia had 60,000 troops in the

233
00:11:28,938 --> 00:11:36,618
Vietnam War and like the USA our rates

234
00:11:32,509 --> 00:11:39,139
of PTSD depression anxiety and suicide

235
00:11:36,619 --> 00:11:45,199
in our troops wherever they served are

236
00:11:39,139 --> 00:11:47,149
too high since 1999 49 Australian

237
00:11:45,198 --> 00:11:52,099
soldiers have been killed whilst on

238
00:11:47,149 --> 00:11:57,168
active duty while 239 have taken their

239
00:11:52,100 --> 00:11:59,149
own lives so if you can't manage full

240
00:11:57,168 --> 00:12:01,278
push-ups try them on your knees or

241
00:11:59,149 --> 00:12:04,999
standing and doing them against the

242
00:12:01,278 --> 00:12:08,438
kitchen bench alternatively many people

243
00:12:04,999 --> 00:12:11,119
are instead donating \$22 to

244
00:12:08,438 --> 00:12:14,838
organizations assisting veterans in

245
00:12:11,119 --> 00:12:17,119
various ways if none of those options

246
00:12:14,839 --> 00:12:19,789
are viable you can always raise

247
00:12:17,119 --> 00:12:22,399
awareness by simply talking about it and

248
00:12:19,788 --> 00:12:25,788
reaching out to someone who may be

249
00:12:22,399 --> 00:12:28,428
having mental health difficulties there

250
00:12:25,788 --> 00:12:29,088
is help out there if you are struggling

251
00:12:28,428 --> 00:12:31,578
yourself

252
00:12:29,089 --> 00:12:36,550
please don't give up seek some help

253
00:12:31,578 --> 00:12:36,549
thank you this has been Heidi Robertson

254
00:12:45,249 --> 00:12:49,999
we've just opened the quirkology

255
00:12:47,509 --> 00:12:53,600
exhibition at Edinburgh Smew ziam of

256
00:12:49,999 --> 00:12:55,999
childhood you can shrink in size see the

257

00:12:53,600 --> 00:12:59,028
amazing cylinders two squares illusion

258
00:12:55,999 --> 00:13:04,159
live watch all your favorite college

259
00:12:59,028 --> 00:13:05,870
Eclipse create your own illusions we

260
00:13:04,159 --> 00:13:08,688
never tasted by magician David

261
00:13:05,870 --> 00:13:10,549
Copperfield and lots more we can take

262
00:13:08,688 --> 00:13:12,889
the exhibition anywhere so if your

263
00:13:10,549 --> 00:13:15,469
Museum science center shopping mall or

264
00:13:12,889 --> 00:13:21,909
school get in touch for more information

265
00:13:15,470 --> 00:13:21,910
visit [www.a um](http://www.aum)

266
00:13:24,909 --> 00:13:32,620
here's my not spooky action at the

267
00:13:30,110 --> 00:13:32,620
distance

268
00:13:32,639 --> 00:13:37,179
well as you know it's science wig

269
00:13:34,840 --> 00:13:38,800
Science Week all over this city people

270
00:13:37,179 --> 00:13:40,059
are going wild people going crazy people

271
00:13:38,799 --> 00:13:42,039

just going out there and getting that

272

00:13:40,059 --> 00:13:44,409

PhD as quickly as they possibly again

273

00:13:42,039 --> 00:13:46,299

i'm here at catherine at the australian

274

00:13:44,409 --> 00:13:48,759

museum wrap it at the top level now

275

00:13:46,299 --> 00:13:51,459

which is quite palatial having a coffee

276

00:13:48,759 --> 00:13:52,840

but you actually you've got a science

277

00:13:51,460 --> 00:13:55,150

festival t-shirt on so you know what's

278

00:13:52,840 --> 00:13:56,889

going on I sure do so I manage the

279

00:13:55,149 --> 00:13:59,490

Australian Museum science festival here

280

00:13:56,889 --> 00:14:03,220

in Sydney at the host Raleigh Museum and

281

00:13:59,490 --> 00:14:04,899

it's been a very fun week and I'm

282

00:14:03,220 --> 00:14:07,389

looking forward to next week where we've

283

00:14:04,899 --> 00:14:09,100

got all the high school kids coming it's

284

00:14:07,389 --> 00:14:11,049

been very busy here so what have we got

285

00:14:09,100 --> 00:14:12,639

happening today we're doing a show for

286
00:14:11,049 --> 00:14:14,829
some kids are they primary school or

287
00:14:12,639 --> 00:14:16,449
high school so this week has been all

288
00:14:14,830 --> 00:14:18,400
the primary school we've already seen

289
00:14:16,450 --> 00:14:20,650
about 3,000 primary school kids come

290
00:14:18,399 --> 00:14:22,539
through the door another yelling that is

291
00:14:20,649 --> 00:14:25,029
a lot of yelling it's a lot of

292
00:14:22,539 --> 00:14:28,509
excitement so we have live animals so

293
00:14:25,029 --> 00:14:32,319
the kids get to meet Frank the 20

294
00:14:28,509 --> 00:14:35,019
frogmouth they get to hold lizards and a

295
00:14:32,320 --> 00:14:37,600
big snake which scares a few kids to

296
00:14:35,019 --> 00:14:39,519
have you got a Gibbon no don't have to

297
00:14:37,600 --> 00:14:42,220
give it the eight the apes are not

298
00:14:39,519 --> 00:14:45,490
represented I wouldn't say that aches

299
00:14:42,220 --> 00:14:46,509
are not represented that's true and look

300
00:14:45,490 --> 00:14:49,330
at the kids been a bit difficult

301
00:14:46,509 --> 00:14:53,439
sometimes kids can pull or push or hide

302
00:14:49,330 --> 00:14:55,600
the turtle no the kids have been really

303
00:14:53,440 --> 00:14:58,600
great it helps that the teachers are

304
00:14:55,600 --> 00:15:00,700
there with the kids but they've just

305
00:14:58,600 --> 00:15:03,490
been fantastic they've just really

306
00:15:00,700 --> 00:15:04,960
enjoyed every single workshop and every

307
00:15:03,490 --> 00:15:07,299
single show that they've attended today

308
00:15:04,960 --> 00:15:08,920
and catherine has someone who's seen a

309
00:15:07,299 --> 00:15:10,929
few things going on what do they seem to

310
00:15:08,919 --> 00:15:13,149
be the most interested in what's the one

311
00:15:10,929 --> 00:15:17,019
thing the kids go oh they're really up

312
00:15:13,149 --> 00:15:19,750
for it well one of my favorites is a the

313
00:15:17,019 --> 00:15:22,600
forensic science workshop so the stem

314

00:15:19,750 --> 00:15:25,179
reactor not the stem reactor and we've

315
00:15:22,600 --> 00:15:28,210
got another CSI our workshop which is

316
00:15:25,179 --> 00:15:30,579
run by some astronomers am educators and

317
00:15:28,210 --> 00:15:33,040
the kids get to dress up in a suit so

318
00:15:30,580 --> 00:15:35,440
they get to put on the same equipment

319
00:15:33,039 --> 00:15:38,579
that forensic police use and when they

320
00:15:35,440 --> 00:15:41,440
enter a crime scene and I get to do DNA

321
00:15:38,580 --> 00:15:43,570
fingerprinting which is great they also

322
00:15:41,440 --> 00:15:45,760
so they work in groups and there's a

323
00:15:43,570 --> 00:15:48,250
team leader there's a fingerprint expert

324
00:15:45,759 --> 00:15:49,689
there's a material expert and they get

325
00:15:48,250 --> 00:15:51,519
to work together to try and solve a

326
00:15:49,690 --> 00:15:52,690
crime so it's a very immersive and

327
00:15:51,519 --> 00:15:54,039
that's the whole thing about the Science

328
00:15:52,690 --> 00:15:57,760

Festival it's a very immersive

329

00:15:54,039 --> 00:15:59,860

experience for the kids to engage with a

330

00:15:57,759 --> 00:16:03,340

whole range of different science so this

331

00:15:59,860 --> 00:16:05,230

is forensic science but we've got every

332

00:16:03,340 --> 00:16:07,840

other science as well which is here

333

00:16:05,230 --> 00:16:09,850

today so physics and chemistry and I'm

334

00:16:07,840 --> 00:16:11,860

happened have you got a PhD have you

335

00:16:09,850 --> 00:16:14,620

been to uni or less or thing I have been

336

00:16:11,860 --> 00:16:16,509

to uni I haven't I got a PhD though what

337

00:16:14,620 --> 00:16:18,669

are you working on so when I went to

338

00:16:16,509 --> 00:16:21,340

university I do the science

339

00:16:18,669 --> 00:16:26,789

communications degree and it's like

340

00:16:21,340 --> 00:16:29,080

ology degree oh ok so dad will me um

341

00:16:26,789 --> 00:16:31,599

narcissist you're looking at me you're

342

00:16:29,080 --> 00:16:34,000

thinking narcissist or sociopath what

343
00:16:31,600 --> 00:16:36,970
are you thinking here I wouldn't want to

344
00:16:34,000 --> 00:16:39,580
disclose on radio yes yep she can't tell

345
00:16:36,970 --> 00:16:41,350
you she knows she just can't tell you um

346
00:16:39,580 --> 00:16:42,759
so does it make it actually having that

347
00:16:41,350 --> 00:16:44,560
the critters that make it difficult when

348
00:16:42,759 --> 00:16:48,069
you meet people because you go on psych

349
00:16:44,559 --> 00:16:52,629
101 Europe mmm I mean everybody's in the

350
00:16:48,070 --> 00:16:56,740
DSM even you are in the dsm-5 that is

351
00:16:52,629 --> 00:16:59,320
Jay um I think we've a psychology degree

352
00:16:56,740 --> 00:17:03,340
it's you do get a greater understanding

353
00:16:59,320 --> 00:17:04,960
and I use a lot of what I've learnt for

354
00:17:03,340 --> 00:17:08,110
this fester for it for instance because

355
00:17:04,960 --> 00:17:10,720
we I did child development so I know

356
00:17:08,109 --> 00:17:12,699
what stage the children are at all so

357
00:17:10,720 --> 00:17:14,350
what type of learning styles we should

358
00:17:12,700 --> 00:17:16,059
be using for the different types of kids

359
00:17:14,349 --> 00:17:18,339
so they're showing museum we're all

360
00:17:16,059 --> 00:17:22,589
about informal learning and immersive

361
00:17:18,339 --> 00:17:24,500
learning and we treat every individual

362
00:17:22,589 --> 00:17:26,539
differently okay

363
00:17:24,500 --> 00:17:27,980
what do you think the next step here

364
00:17:26,539 --> 00:17:30,409
for the museum is there something you'd

365
00:17:27,980 --> 00:17:32,360
like to see them do here for the next

366
00:17:30,410 --> 00:17:35,060
step for Science Week next year's or

367
00:17:32,359 --> 00:17:37,099
something yeah we should do that funny

368
00:17:35,059 --> 00:17:40,519
you mention that and there is that's

369
00:17:37,099 --> 00:17:44,379
alive I mean at the moment ya been so

370
00:17:40,519 --> 00:17:47,809
good um but there is a lot of potential

371

00:17:44,380 --> 00:17:51,110
of including even more workshops and

372
00:17:47,809 --> 00:17:54,379
shows we do have over three but actually

373
00:17:51,109 --> 00:17:56,689
I 405 different workshops over the two

374
00:17:54,380 --> 00:17:59,660
weeks and we have 50 organizations

375
00:17:56,690 --> 00:18:01,970
coming from all over Australia

376
00:17:59,660 --> 00:18:03,800
presenting which is fantastic but what I

377
00:18:01,970 --> 00:18:06,130
would personally like to see you next

378
00:18:03,799 --> 00:18:08,960
year is having some more international

379
00:18:06,130 --> 00:18:10,040
collaborations so yesterday I met up

380
00:18:08,960 --> 00:18:12,850
with the director of the New Zealand

381
00:18:10,039 --> 00:18:15,019
Science Festival and we're talking about

382
00:18:12,849 --> 00:18:17,240
us being part of their festival and

383
00:18:15,019 --> 00:18:19,460
having some indigenous science because

384
00:18:17,240 --> 00:18:21,349
one of our big focus is here over the

385
00:18:19,460 --> 00:18:23,930

two weeks is indigenous science and

386

00:18:21,349 --> 00:18:26,449

having their Maori science educators

387

00:18:23,930 --> 00:18:28,250

coming and giving a different cultural

388

00:18:26,450 --> 00:18:31,309

aspect of their science that they use in

389

00:18:28,250 --> 00:18:33,730

New Zealand and there's so many other

390

00:18:31,309 --> 00:18:37,369

partnerships and collaborations that I

391

00:18:33,730 --> 00:18:39,410

would love to investigate for next year

392

00:18:37,369 --> 00:18:40,759

you can learn from everyone no matter

393

00:18:39,410 --> 00:18:43,310

what you know where they're from

394

00:18:40,759 --> 00:18:44,240

everybody has a story and you can well

395

00:18:43,309 --> 00:18:46,490

that's what that's what it's all about

396

00:18:44,240 --> 00:18:48,470

this week here really so we're going to

397

00:18:46,490 --> 00:18:51,200

be confronting some primary school

398

00:18:48,470 --> 00:18:52,819

students down there mo yes we have a lot

399

00:18:51,200 --> 00:18:54,500

of primary school kids and that's

400
00:18:52,819 --> 00:18:57,409
important teachers to corral them there

401
00:18:54,500 --> 00:18:58,819
we do have some teachers the good thing

402
00:18:57,410 --> 00:19:01,070
and back listener this is a good thing

403
00:18:58,819 --> 00:19:03,019
when promise cool kids come in it's a

404
00:19:01,069 --> 00:19:03,829
bit different to when high school kids

405
00:19:03,019 --> 00:19:05,660
come in because I've noticed

406
00:19:03,829 --> 00:19:07,789
particularly if it's a private girls

407
00:19:05,660 --> 00:19:09,529
school from year 11 or year 12 there

408
00:19:07,789 --> 00:19:11,809
like a bit oh I don't want to appear

409
00:19:09,529 --> 00:19:15,740
uncool but Primus cool kids they're like

410
00:19:11,809 --> 00:19:17,960
oh I want to talk exactly I that's why I

411
00:19:15,740 --> 00:19:21,410
really loved looking after the primary

412
00:19:17,960 --> 00:19:23,269
school kids but even those though the

413
00:19:21,410 --> 00:19:25,430
year 11 and 12 they look like they're

414
00:19:23,269 --> 00:19:26,869
not having fun even their in their

415
00:19:25,430 --> 00:19:29,210
cliques I don't want to appear uncool

416
00:19:26,869 --> 00:19:31,669
they don't want to be article but I've

417
00:19:29,210 --> 00:19:33,950
talked to quite a lot after workshop so

418
00:19:31,670 --> 00:19:35,840
I because I came from a science teaching

419
00:19:33,950 --> 00:19:36,789
background so i was doing shows all

420
00:19:35,839 --> 00:19:38,529
around Australia

421
00:19:36,789 --> 00:19:41,529
around Scotland all around England for a

422
00:19:38,529 --> 00:19:43,269
while and so what I've found specially

423
00:19:41,529 --> 00:19:46,029
teaching and I love teaching the high

424
00:19:43,269 --> 00:19:47,980
school students because you do all these

425
00:19:46,029 --> 00:19:48,970
things and you get Blake faces because

426
00:19:47,980 --> 00:19:50,890
they don't want to show that they're

427
00:19:48,970 --> 00:19:53,289
really excited they talked to them after

428

00:19:50,890 --> 00:19:55,240
wouldn't like wow that was amazing we

429
00:19:53,289 --> 00:19:57,309
want to be a scientist like you we want

430
00:19:55,240 --> 00:20:00,430
to get more involved what can we study

431
00:19:57,309 --> 00:20:03,490
to do whatever particular science that I

432
00:20:00,430 --> 00:20:05,650
was teaching that day and so even though

433
00:20:03,490 --> 00:20:09,609
they don't emotionally show it because

434
00:20:05,650 --> 00:20:14,500
they want to be cool yeah I gave a been

435
00:20:09,609 --> 00:20:17,319
cool years ago frankly no point I I

436
00:20:14,500 --> 00:20:20,440
think they know you're still in there

437
00:20:17,319 --> 00:20:22,029
you're doing fine but I gave up yeah so

438
00:20:20,440 --> 00:20:25,299
what I would recommend to the listeners

439
00:20:22,029 --> 00:20:27,940
is a thank you keep that in a child keep

440
00:20:25,299 --> 00:20:31,049
learning keep experiencing and living

441
00:20:27,940 --> 00:20:33,039
life to the fullest we're here at the

442
00:20:31,049 --> 00:20:34,450

Australian Museum we're just waiting to

443

00:20:33,039 --> 00:20:36,639

go in and do the mystery investigators

444

00:20:34,450 --> 00:20:39,190

show it's a primary school crowd would

445

00:20:36,640 --> 00:20:43,050

be working to today mr. Saunders primary

446

00:20:39,190 --> 00:20:45,759

school age groups that's something like

447

00:20:43,049 --> 00:20:47,829

ten eight and eleven twelve eleven

448

00:20:45,759 --> 00:20:49,390

twelve thirteen year old kids are you

449

00:20:47,829 --> 00:20:51,490

know but they will have a teacher with

450

00:20:49,390 --> 00:20:52,840

them and the thing is that if you're

451

00:20:51,490 --> 00:20:56,589

saying something just say really loudly

452

00:20:52,839 --> 00:20:58,779

and they believe you that's true and

453

00:20:56,589 --> 00:21:00,490

I've said to you today that you can have

454

00:20:58,779 --> 00:21:02,670

it up a bit more not that you ever ham

455

00:21:00,490 --> 00:21:05,470

it up and use your trombone yep using

456

00:21:02,670 --> 00:21:07,750

cardboard is an element obviously stuff

457
00:21:05,470 --> 00:21:10,150
like that there's hydrogen and cardboard

458
00:21:07,750 --> 00:21:11,410
and obviously hydrogen in cardboard you

459
00:21:10,150 --> 00:21:13,030
say it loud like that they believe you

460
00:21:11,410 --> 00:21:14,800
don't know what they all say what's an

461
00:21:13,029 --> 00:21:16,269
element I'm very disappointed there's a

462
00:21:14,799 --> 00:21:17,769
few animals that you can play with here

463
00:21:16,269 --> 00:21:19,869
in the museum but as I have mentioned

464
00:21:17,769 --> 00:21:22,150
book there's no Gibbons there's no given

465
00:21:19,869 --> 00:21:24,339
to play with at the Australian is in

466
00:21:22,150 --> 00:21:26,500
we're sitting under the skeleton of a

467
00:21:24,339 --> 00:21:27,480
giant whale or all whales a pretty big I

468
00:21:26,500 --> 00:21:29,869
suppose hell

469
00:21:27,480 --> 00:21:34,019
and over your shoulder there there's a

470
00:21:29,869 --> 00:21:36,269
buffalo and a bear and an armadillo well

471
00:21:34,019 --> 00:21:37,829
and I see our doors open here so we get

472
00:21:36,269 --> 00:21:40,619
we'd better get our bed of nails ready

473
00:21:37,829 --> 00:21:42,779
our door is open but all the kids from

474
00:21:40,619 --> 00:21:44,699
the previous show or the show just

475
00:21:42,779 --> 00:21:46,049
finish haven't streamed out yet but

476
00:21:44,700 --> 00:21:49,110
there are a lot of kids running around

477
00:21:46,049 --> 00:21:52,769
the hall here that's true yelling

478
00:21:49,109 --> 00:21:54,929
Buffalo Wow see I thought it was just a

479
00:21:52,769 --> 00:21:57,389
nena cherry song but there it is Buffalo

480
00:21:54,930 --> 00:21:59,820
now that the previous kids are now

481
00:21:57,390 --> 00:22:01,470
streaming out of the Hofstra theater so

482
00:21:59,819 --> 00:22:03,240
in about two minutes we'll be able to go

483
00:22:01,470 --> 00:22:07,710
in set up the mission investigators and

484
00:22:03,240 --> 00:22:09,870
we'll take it from there we've just done

485

00:22:07,710 --> 00:22:11,610
the first mystery investigators show of

486
00:22:09,869 --> 00:22:13,139
the day we're just waiting for the

487
00:22:11,609 --> 00:22:15,479
second one to come in how do you think

488
00:22:13,140 --> 00:22:18,630
we first show and Richard my mic is on

489
00:22:15,480 --> 00:22:20,759
so my price is ok well I can I can just

490
00:22:18,630 --> 00:22:22,760
tell you it went well it went very well

491
00:22:20,759 --> 00:22:25,289
when well it's ok I won't turn my mic

492
00:22:22,759 --> 00:22:28,109
yeah it was a big audience and they were

493
00:22:25,289 --> 00:22:29,849
really well behaved a group of boys in

494
00:22:28,109 --> 00:22:32,099
fact you and if I get to be confused

495
00:22:29,849 --> 00:22:33,629
when they picked the water even if they

496
00:22:32,099 --> 00:22:35,459
have three goes at it went on pixel

497
00:22:33,630 --> 00:22:40,190
water they know it does work oddly

498
00:22:35,460 --> 00:22:40,190
enough that happens one in six goes

499
00:22:44,690 --> 00:22:48,600

I'll have a go and you can display

500

00:22:46,799 --> 00:22:50,099

what's happening okay now it looks like

501

00:22:48,599 --> 00:22:51,869

you're doing some sort of fractal thing

502

00:22:50,099 --> 00:22:53,399

here Richard what are you doing I'm

503

00:22:51,869 --> 00:22:56,069

looking how it looks like you're shaving

504

00:22:53,400 --> 00:22:57,840

of the mouse that's that's a very

505

00:22:56,069 --> 00:23:02,700

extreme closeup of my face well you

506

00:22:57,839 --> 00:23:04,409

right oh so we can do that and then

507

00:23:02,700 --> 00:23:05,970

imagine that we've got all sorts of skin

508

00:23:04,410 --> 00:23:08,519

cancers this is that this keep you

509

00:23:05,970 --> 00:23:10,920

amused all afternoon that's one way to

510

00:23:08,519 --> 00:23:12,990

save me oh that that's what I'd do

511

00:23:10,920 --> 00:23:15,330

immediately I would use that and go yeah

512

00:23:12,990 --> 00:23:17,990

I'm gonna die there's my palm print you

513

00:23:15,329 --> 00:23:20,159

see so what we have here is we've got a

514
00:23:17,990 --> 00:23:22,620
magnifying device set up to a computer

515
00:23:20,160 --> 00:23:24,269
and pressed against my skin with some

516
00:23:22,619 --> 00:23:27,299
lights and we can see an extreme

517
00:23:24,269 --> 00:23:29,430
close-up of the pores of my skin yeah

518
00:23:27,299 --> 00:23:34,109
and for the listener it's best described

519
00:23:29,430 --> 00:23:35,730
as there well come on I mean I don't

520
00:23:34,109 --> 00:23:37,309
think anyone's skin up that close is

521
00:23:35,730 --> 00:23:39,690
going to be a portrait of porcelain

522
00:23:37,309 --> 00:23:42,839
let's look at my watch look at that time

523
00:23:39,690 --> 00:23:44,549
sticking by Wow yet also yeah that's

524
00:23:42,839 --> 00:23:46,319
true yeah when you do look at that it

525
00:23:44,549 --> 00:23:47,879
just goes to explain why shouldn't spend

526
00:23:46,319 --> 00:23:52,109
so much on watches because any what's

527
00:23:47,880 --> 00:23:54,150
even that close looks crappy look I'll

528
00:23:52,109 --> 00:23:55,619
actually talk to someone who has talked

529
00:23:54,150 --> 00:23:58,980
to somebody knows yes I believe this

530
00:23:55,619 --> 00:24:01,049
person has been to a particular place

531
00:23:58,980 --> 00:24:03,059
for more than a day like I did who we

532
00:24:01,049 --> 00:24:05,069
got him where you from my name is

533
00:24:03,059 --> 00:24:07,289
Allison from the university of

534
00:24:05,069 --> 00:24:08,789
technology sydney sorry my voice is a

535
00:24:07,289 --> 00:24:09,720
little bit quirky that's okay cause

536
00:24:08,789 --> 00:24:12,000
you've been talking to people about

537
00:24:09,720 --> 00:24:13,890
science all day today and what you've

538
00:24:12,000 --> 00:24:15,869
been hoping to educate them with with

539
00:24:13,890 --> 00:24:18,240
the magnifying on the computer screen

540
00:24:15,869 --> 00:24:20,250
there just to show them that under the

541
00:24:18,240 --> 00:24:22,740
microscope the whole world completely

542

00:24:20,250 --> 00:24:24,069
changes oh yeah when it comes to one

543
00:24:22,740 --> 00:24:26,230
perspective

544
00:24:24,069 --> 00:24:28,029
the the microscope is completely

545
00:24:26,230 --> 00:24:29,500
different one and that your whole

546
00:24:28,029 --> 00:24:32,410
perspective on things can completely

547
00:24:29,500 --> 00:24:34,150
change and what you normally think of

548
00:24:32,410 --> 00:24:36,730
something can be completely different to

549
00:24:34,150 --> 00:24:39,070
what you initially had thought and so a

550
00:24:36,730 --> 00:24:40,269
blue circle may be completely different

551
00:24:39,069 --> 00:24:42,099
under the microscope and that is

552
00:24:40,269 --> 00:24:44,410
different pigments of different colors

553
00:24:42,099 --> 00:24:45,939
making that blew that's quite a good

554
00:24:44,410 --> 00:24:48,100
scientific lesson to make and of course

555
00:24:45,940 --> 00:24:49,900
even compared to when people talk about

556
00:24:48,099 --> 00:24:52,839

quantum stuff this is still a major

557

00:24:49,900 --> 00:24:56,440
macrovision yeah yeah so it's definitely

558

00:24:52,839 --> 00:24:57,669
not the strongest of magnification but

559

00:24:56,440 --> 00:24:59,170
it does give a little bit more of an

560

00:24:57,670 --> 00:25:01,269
insight to kids who want to know more

561

00:24:59,170 --> 00:25:03,220
about it what do they normally see most

562

00:25:01,269 --> 00:25:04,599
surprised about is that they put it on

563

00:25:03,220 --> 00:25:05,740
their face or their fingerprint or what

564

00:25:04,599 --> 00:25:07,389
do they normally look and they go I

565

00:25:05,740 --> 00:25:09,309
would not change what seems to be

566

00:25:07,390 --> 00:25:11,650
blowing their mind today it's definitely

567

00:25:09,309 --> 00:25:13,899
skin because when we look at different

568

00:25:11,650 --> 00:25:17,500
people's skin it just looks quite smooth

569

00:25:13,900 --> 00:25:19,120
and just quite normal but under the

570

00:25:17,500 --> 00:25:22,119
microscope there's definitely definitely

571
00:25:19,119 --> 00:25:24,639
all these different cracks and pigments

572
00:25:22,119 --> 00:25:26,889
of colors some people like to look at

573
00:25:24,640 --> 00:25:29,320
their freckles and little bumps and it

574
00:25:26,890 --> 00:25:31,930
just looks so strange and out of this

575
00:25:29,319 --> 00:25:33,669
world sometimes you look but for a major

576
00:25:31,930 --> 00:25:35,049
hypochondriac like me like i said i

577
00:25:33,670 --> 00:25:36,580
think i could use those be going oh yeah

578
00:25:35,049 --> 00:25:38,230
that's a cancer that's a gantlet that's

579
00:25:36,579 --> 00:25:40,449
cancer that's that pimples gonna kill me

580
00:25:38,230 --> 00:25:42,220
all that's all stuff you know some

581
00:25:40,450 --> 00:25:45,670
people look at bombs and think oh my god

582
00:25:42,220 --> 00:25:47,110
what is that and lots of courses have

583
00:25:45,670 --> 00:25:48,460
you been talking about the people might

584
00:25:47,109 --> 00:25:50,199
be interested at UTS could you have

585
00:25:48,460 --> 00:25:51,400
quite a range of courses there for

586
00:25:50,200 --> 00:25:53,200
someone who wants to get into energy

587
00:25:51,400 --> 00:25:54,700
sciences because what's your favorite

588
00:25:53,200 --> 00:25:56,410
you'd obviously have been playing a

589
00:25:54,700 --> 00:25:58,690
favorite here wouldn't you yes so I've

590
00:25:56,410 --> 00:26:00,880
done medical science so the biologies

591
00:25:58,690 --> 00:26:02,590
are definitely my favorite but out of

592
00:26:00,880 --> 00:26:05,280
the things that we have in our stand we

593
00:26:02,589 --> 00:26:09,639
have different examples of physics maths

594
00:26:05,279 --> 00:26:12,059
biology and so all the people have come

595
00:26:09,640 --> 00:26:15,670
here we've definitely be talking about

596
00:26:12,059 --> 00:26:17,799
the medical sciences applied physics and

597
00:26:15,670 --> 00:26:19,420
chemistry okay and here on the skeptic

598
00:26:17,799 --> 00:26:21,309
zone I do like to ask people what took

599

00:26:19,420 --> 00:26:22,990
them down there tertiary education track

600
00:26:21,309 --> 00:26:24,579
what why did you get interested in

601
00:26:22,990 --> 00:26:26,289
biology why didn't you go into something

602
00:26:24,579 --> 00:26:27,279
a bit more static like geology or

603
00:26:26,289 --> 00:26:29,680
something like that

604
00:26:27,279 --> 00:26:31,839
well when I got into it I just realized

605
00:26:29,680 --> 00:26:34,120
I love learning about the human body and

606
00:26:31,839 --> 00:26:36,039
just how our body works it's something

607
00:26:34,119 --> 00:26:38,649
we normally take for granted how we work

608
00:26:36,039 --> 00:26:41,049
how we breathe how we eat and when we

609
00:26:38,650 --> 00:26:43,000
know more about it we begin to

610
00:26:41,049 --> 00:26:45,339
appreciate a lot more of our bodies and

611
00:26:43,000 --> 00:26:47,529
just how we take care of it what's the

612
00:26:45,339 --> 00:26:49,359
thing that fascinates you most about the

613
00:26:47,529 --> 00:26:50,829

human body in the way it does itself is

614

00:26:49,359 --> 00:26:53,169

it there is that the reproduction

615

00:26:50,829 --> 00:26:57,089

digestion is a particular area where go

616

00:26:53,170 --> 00:26:59,380

that's amazing to be up to be honest um

617

00:26:57,089 --> 00:27:01,449

everything about it because the whole

618

00:26:59,380 --> 00:27:03,430

body works in unison you learn of the

619

00:27:01,450 --> 00:27:06,250

different systems but then you realize

620

00:27:03,430 --> 00:27:08,380

that one thing isn't depend on

621

00:27:06,250 --> 00:27:11,410

independent of each other they all work

622

00:27:08,380 --> 00:27:14,170

together and without one of them another

623

00:27:11,410 --> 00:27:17,529

doesn't work and so it becomes this very

624

00:27:14,170 --> 00:27:19,750

complete thing that sometimes looks

625

00:27:17,529 --> 00:27:22,569

really fliegel but also really resilient

626

00:27:19,750 --> 00:27:25,930

at the same time I don't think a lot of

627

00:27:22,569 --> 00:27:29,099

people realize just how easy it is for

628
00:27:25,930 --> 00:27:31,210
our bodies to stop working but also how

629
00:27:29,099 --> 00:27:33,579
amazing the body look at the first place

630
00:27:31,210 --> 00:27:35,799
yeah it's just like the things that

631
00:27:33,579 --> 00:27:38,529
happen in our body that makes things why

632
00:27:35,799 --> 00:27:40,899
is this incredible it's the word

633
00:27:38,529 --> 00:27:42,460
symbiosis away to explain everything

634
00:27:40,900 --> 00:27:44,860
works in rhythm or is that a bad example

635
00:27:42,460 --> 00:27:46,930
no notice precisely how it works just

636
00:27:44,859 --> 00:27:49,389
from the different systems to the

637
00:27:46,930 --> 00:27:51,180
different cells to the different even

638
00:27:49,390 --> 00:27:53,560
the back to how the bacteria of

639
00:27:51,180 --> 00:27:55,539
functions to help our body and sometimes

640
00:27:53,559 --> 00:27:57,700
hurt us yeah because we just can't go

641
00:27:55,539 --> 00:27:59,559
around the whole stack of bacteria most

642
00:27:57,700 --> 00:28:01,330
of it as harmless to us isn't it exactly

643
00:27:59,559 --> 00:28:03,490
so some would say that we're more

644
00:28:01,329 --> 00:28:05,559
bacteria than human given that we have a

645
00:28:03,490 --> 00:28:07,509
lot more bacteria but people who like

646
00:28:05,559 --> 00:28:08,919
bacteria say that I think you'd find

647
00:28:07,509 --> 00:28:10,779
that it's people who work in the

648
00:28:08,920 --> 00:28:12,910
bacterial sciences they always say and

649
00:28:10,779 --> 00:28:14,259
stuff like that I mean I think viruses

650
00:28:12,910 --> 00:28:15,970
like you know no one ever has a good

651
00:28:14,259 --> 00:28:18,609
word for them but the bacteria people

652
00:28:15,970 --> 00:28:19,970
they're always push in that bacteria

653
00:28:18,609 --> 00:28:23,719
definitely has

654
00:28:19,970 --> 00:28:25,190
a good side to our story but of course

655
00:28:23,720 --> 00:28:28,490
they definitely have a bad side but I

656

00:28:25,190 --> 00:28:31,090
didn't think viruses have will play a

657
00:28:28,490 --> 00:28:34,309
particularly good role in our daily life

658
00:28:31,089 --> 00:28:35,779
compared to bacteria anyway look look so

659
00:28:34,309 --> 00:28:37,129
have a kind word for bacteria

660
00:28:35,779 --> 00:28:38,720
occasionally people lift your game on

661
00:28:37,130 --> 00:28:39,950
that department thanks a lot for

662
00:28:38,720 --> 00:28:41,930
chatting to us and where can we find out

663
00:28:39,950 --> 00:28:43,370
more about UTS online or more of the

664
00:28:41,930 --> 00:28:44,870
courses and that sort of thing if you're

665
00:28:43,369 --> 00:28:49,129
thinking well maybe I might do some

666
00:28:44,869 --> 00:28:51,349
science in my life so at the moment the

667
00:28:49,130 --> 00:28:53,600
beers sort of help would probably be a

668
00:28:51,349 --> 00:28:56,269
UTS open day which is on August

669
00:28:53,599 --> 00:28:58,579
twenty-ninth I think and that way

670
00:28:56,269 --> 00:29:01,430

everyone can come into the university

671

00:28:58,579 --> 00:29:04,490

and check out firsthand the courses and

672

00:29:01,430 --> 00:29:07,549

academics that are available there and

673

00:29:04,490 --> 00:29:10,910

what's your website UTS calm day you

674

00:29:07,549 --> 00:29:13,250

that's it yeah it's very easy and if not

675

00:29:10,910 --> 00:29:14,810

just go to google and click utes and

676

00:29:13,250 --> 00:29:17,269

protect and particularly the course that

677

00:29:14,809 --> 00:29:19,069

you want to do it's very easy or if you

678

00:29:17,269 --> 00:29:20,539

come to the University you can get a

679

00:29:19,069 --> 00:29:21,710

core staff from right have a good day

680

00:29:20,539 --> 00:29:23,569

here I'll let you get back to your

681

00:29:21,710 --> 00:29:26,259

magnifying glass and scaring people bye

682

00:29:23,569 --> 00:29:26,259

bye okay

683

00:29:48,058 --> 00:29:54,700

dr. Harriet hall md known to thousands

684

00:29:52,028 --> 00:29:56,950

as the skeptic a retired family

685
00:29:54,700 --> 00:30:00,069
physician and former Air Force flight

686
00:29:56,950 --> 00:30:01,389
surgeon she writes about medicine so

687
00:30:00,069 --> 00:30:04,990
called complementary and alternative

688
00:30:01,388 --> 00:30:08,319
medicine science hackery and critical

689
00:30:04,990 --> 00:30:10,599
thinking Harriet now has a free course a

690
00:30:08,319 --> 00:30:13,648
series of ten video lectures on science

691
00:30:10,599 --> 00:30:16,388
based medicine and alternative medicine

692
00:30:13,648 --> 00:30:18,638
the videos and an accompanying course

693
00:30:16,388 --> 00:30:22,750
guide can be found by following the link

694
00:30:18,638 --> 00:30:26,769
at skeptic info or by visiting web

695
00:30:22,750 --> 00:30:31,119
Randy's org slash educational dash

696
00:30:26,769 --> 00:30:34,240
modules dot HTML topics covered in the

697
00:30:31,119 --> 00:30:37,349
series are science-based medicine vs.

698
00:30:34,240 --> 00:30:40,769
evidence-based medicine what is cam

699
00:30:37,349 --> 00:30:43,959
chiropractic acupuncture homeopathy

700
00:30:40,769 --> 00:30:46,089
naturopathy and herbal medicine energy

701
00:30:43,960 --> 00:30:49,240
medicine miscellaneous alternatives

702
00:30:46,089 --> 00:30:52,558
pitfalls in research and science-based

703
00:30:49,240 --> 00:30:55,298
medicine in the media and politics

704
00:30:52,558 --> 00:30:57,849
Harriet covers each topic in a matter of

705
00:30:55,298 --> 00:31:03,538
fact no-nonsense way that shorter

706
00:30:57,849 --> 00:31:03,538
educate and entertain skeptic dot info

707
00:31:22,650 --> 00:31:28,120
thank you for listening to the skeptic

708
00:31:25,029 --> 00:31:30,308
zone get well soon Richard I do hope

709
00:31:28,119 --> 00:31:33,099
you're skeptical kittens are looking

710
00:31:30,308 --> 00:31:36,009
after you I don't have any skeptical

711
00:31:33,099 --> 00:31:41,439
cats I'm afraid just a rather credulous

712
00:31:36,009 --> 00:31:45,220
dog who nevertheless says hello and I

713

00:31:41,440 --> 00:31:47,259
must apologize for probably making you

714
00:31:45,220 --> 00:31:49,870
feel a bit nor nauseated this morning

715
00:31:47,259 --> 00:31:52,359
Richard when I told you I was standing

716
00:31:49,869 --> 00:31:55,779
in the pharmacy looking at homeopathic

717
00:31:52,359 --> 00:32:01,209
teething gel for babies and rows and

718
00:31:55,779 --> 00:32:05,410
rows of ear candles yep still on the

719
00:32:01,210 --> 00:32:07,200
shelves but for this week this is highly

720
00:32:05,410 --> 00:32:10,090
robertson from the Northern Rivers

721
00:32:07,200 --> 00:32:12,279
vaccination supporters signing off from

722
00:32:10,089 --> 00:32:19,119
the beautiful northern rivers of New

723
00:32:12,279 --> 00:32:21,639
South Wales you've been listening to the

724
00:32:19,119 --> 00:32:25,449
skeptics own podcast visit our website

725
00:32:21,640 --> 00:32:28,750
at wwc a petting zoo TV for contacts an

726
00:32:25,450 --> 00:32:31,900
archive of all episodes since 2008 and

727
00:32:28,750 --> 00:32:33,970

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729

00:32:33,970 --> 00:32:40,839

at skeptic zone liking us on facebook

730

00:32:37,329 --> 00:32:42,339

and leaving a review on iTunes you can

731

00:32:40,839 --> 00:32:46,178

also show your support by subscribing

732

00:32:42,339 --> 00:32:49,209

via paypal for as little as 99 cents a

733

00:32:46,179 --> 00:32:50,860

week the skeptic zone is an independent

734

00:32:49,210 --> 00:32:53,319

production the views and opinions

735

00:32:50,859 --> 00:32:54,909

expressed on the skeptic zone are not

736

00:32:53,319 --> 00:32:57,789

necessarily those of Australian

737

00:32:54,910 --> 00:33:00,600

skeptically or any other skeptical

738

00:32:57,789 --> 00:33:00,599

organization