

**The Skeptic Zone Podcast
Show 409 - 21 August 2016**



Enrique Bustamante

1
00:00:22,359 --> 00:00:09,080
welcome to the skeptic zone the podcast

2
00:00:29,600 --> 00:00:25,429
hello and welcome to the skeptics own

3
00:00:33,080 --> 00:00:29,610
podcast episode number 409 for the 21st

4
00:00:35,450 --> 00:00:33,090
of august 2016 Heidi Robertson here

5
00:00:39,610 --> 00:00:35,460
filling in for Richard Saunders who's

6
00:00:42,680 --> 00:00:39,620
not feeling so crash hot today I'm sorry

7
00:00:45,770 --> 00:00:42,690
coming up more from the Brisbane skeptic

8
00:00:47,360 --> 00:00:45,780
camp and an interview with Enric a who

9
00:00:50,899 --> 00:00:47,370
talks about the real dunning-kruger

10
00:00:53,869 --> 00:00:50,909
effect no not Brian Dunning from the

11
00:00:56,210 --> 00:00:53,879
sceptile cast this is the effect where

12
00:00:59,270 --> 00:00:56,220
unskilled people tend to overestimate

13
00:01:02,299 --> 00:00:59,280

their abilities it's not as many people

14

00:01:06,020 --> 00:01:02,309

think people who are too stupid to know

15

00:01:08,420 --> 00:01:06,030

how stupid they are after that we join

16

00:01:10,940 --> 00:01:08,430

Maynard and Richard at the Australian

17

00:01:12,580 --> 00:01:10,950

Museum in Sydney as they get ready to

18

00:01:15,020 --> 00:01:12,590

perform the mystery investigators

19

00:01:18,859 --> 00:01:15,030

science show as part of the ongoing

20

00:01:22,100 --> 00:01:18,869

science week outreach program may not

21

00:01:24,859 --> 00:01:22,110

also chats with Katherine be hag who is

22

00:01:27,080 --> 00:01:24,869

the manager of the festival and visits

23

00:01:30,289 --> 00:01:27,090

the booth of the university of

24

00:01:34,370 --> 00:01:30,299

technology to find out about extreme

25

00:01:36,319 --> 00:01:34,380

magnification with Alison this report

26

00:01:41,330 --> 00:01:36,329

will be of particular interest to

27

00:01:44,989 --> 00:01:41,340

teachers but now it's time for me to run

28

00:01:48,399 --> 00:01:44,999

to the kitchen and make my kids some

29

00:01:52,340 --> 00:01:48,409

lunch I think they have requested

30

00:02:15,360 --> 00:01:52,350

toasted cheese sandwiches while I do

31

00:02:29,020 --> 00:02:19,330

it's the raw skeptic report with Heidi

32

00:02:30,190 --> 00:02:29,030

Robertson okay who've we got here what

33

00:02:32,680 --> 00:02:30,200

are you doing at skeptic aunt what's

34

00:02:36,490 --> 00:02:32,690

your name my name is Enrico Bustamante I

35

00:02:39,670 --> 00:02:36,500

did a short presentation on the actual

36

00:02:42,190 --> 00:02:39,680

dunning-kruger effect and comparative

37

00:02:44,770 --> 00:02:42,200

comparing it to what people tend to

38

00:02:47,530 --> 00:02:44,780

think it is okay so first of all tell us

39

00:02:49,570 --> 00:02:47,540

what your experience has been that what

40

00:02:52,330 --> 00:02:49,580

do people generally think the definition

41

00:02:54,820 --> 00:02:52,340

of the dunning-kruger effect is that the

42

00:02:56,590 --> 00:02:54,830

that people that are too stupid to know

43

00:02:58,360 --> 00:02:56,600

that they're stupid cannot tell that

44

00:03:00,640 --> 00:02:58,370

they are stupid now tell us the correct

45

00:03:02,289 --> 00:03:00,650

meaning of the dunning-kruger effect off

46

00:03:05,770 --> 00:03:02,299

the top of my head the nearest I can

47

00:03:09,030 --> 00:03:05,780

come up with is that those who are

48

00:03:12,210 --> 00:03:09,040

relatively unskilled in a specific thing

49

00:03:14,620 --> 00:03:12,220

tend to suffer illusory superiority

50

00:03:16,060 --> 00:03:14,630

regarding their ability in that

51
00:03:19,539 --> 00:03:16,070
particular thing that is being brought

52
00:03:22,930 --> 00:03:19,549
into question okay so you think the the

53
00:03:24,430 --> 00:03:22,940
whole definition that most people think

54
00:03:26,560 --> 00:03:24,440
that the dunning-kruger effect is that

55
00:03:29,620 --> 00:03:26,570
the people are too stupid to know that

56
00:03:32,259 --> 00:03:29,630
they're stupid is is too simplistic as

57
00:03:35,800 --> 00:03:32,269
was North most things yes it's also very

58
00:03:38,170 --> 00:03:35,810
catchy and sexy for the media and when

59
00:03:39,840 --> 00:03:38,180
you think about if you say well they're

60
00:03:44,319 --> 00:03:39,850
too stupid to know that they're stupid

61
00:03:46,690 --> 00:03:44,329
it also reinforces the whole a positive

62
00:03:49,900 --> 00:03:46,700
message for me they are not as good as I

63
00:03:52,120 --> 00:03:49,910

am so it's more it's a lot catchier it's

64

00:03:53,740 --> 00:03:52,130

not as complicated and you don't have to

65

00:03:55,750 --> 00:03:53,750

think about it too much which is why I

66

00:03:58,020 --> 00:03:55,760

tends to kind of be a good meme that

67

00:04:00,550 --> 00:03:58,030

latches on to people and spreads and

68

00:04:02,979 --> 00:04:00,560

sadly it doesn't give us the real

69

00:04:04,449 --> 00:04:02,989

picture of what tends to happen with

70

00:04:06,449 --> 00:04:04,459

people and that has nothing to do with

71

00:04:09,759 --> 00:04:06,459

intelligence just skill and experience

72

00:04:11,860 --> 00:04:09,769

can you tell us a bit of the history of

73

00:04:16,390 --> 00:04:11,870

whoo Dunning and Kruger were and how

74

00:04:17,110 --> 00:04:16,400

that phrase came about not much I do

75

00:04:19,890 --> 00:04:17,120

know that we

76

00:04:23,620 --> 00:04:19,900

the paper that they submitted in 1998

77

00:04:26,740 --> 00:04:23,630

David Dunning was a research

78

00:04:28,780 --> 00:04:26,750

psychologist if i recall correctly and I

79

00:04:31,629 --> 00:04:28,790

forget his name mr. Krueger was his

80

00:04:33,790 --> 00:04:31,639

undergrad student who his research

81

00:04:35,200 --> 00:04:33,800

student under him and they did a study

82

00:04:38,650 --> 00:04:35,210

which they looked at several different

83

00:04:41,200 --> 00:04:38,660

things including humor and something

84

00:04:43,960 --> 00:04:41,210

more concrete which was grammar and they

85

00:04:46,150 --> 00:04:43,970

had look at how people measured how good

86

00:04:48,909 --> 00:04:46,160

they thought they were how well they

87

00:04:51,820 --> 00:04:48,919

tested and how well they thought they

88

00:04:53,740 --> 00:04:51,830

did at the test and the lower half

89

00:04:56,230 --> 00:04:53,750

especially the lower quarter of people

90

00:04:57,879 --> 00:04:56,240

thought they were quite good and that

91

00:05:01,379 --> 00:04:57,889

they did quite well on the test when in

92

00:05:03,580 --> 00:05:01,389

reality their results were appalling

93

00:05:07,050 --> 00:05:03,590

very interesting because you do see it a

94

00:05:11,379 --> 00:05:07,060

lot that phrase in skeptic circles and

95

00:05:13,600 --> 00:05:11,389

it's interesting to have heard your your

96

00:05:15,340 --> 00:05:13,610

own experiences regarding the

97

00:05:17,439 --> 00:05:15,350

dunning-kruger effect that you spoke of

98

00:05:20,219 --> 00:05:17,449

in your talk yesterday can you take us

99

00:05:23,260 --> 00:05:20,229

through that when you first began work

100

00:05:24,909 --> 00:05:23,270

yes but it was during a practical

101
00:05:28,750 --> 00:05:24,919
experience during my university studies

102
00:05:31,390 --> 00:05:28,760
as a teacher I went to a school that is

103
00:05:34,270 --> 00:05:31,400
not particularly low socio-economic but

104
00:05:38,020 --> 00:05:34,280
as far as student behavior is concerned

105
00:05:40,330 --> 00:05:38,030
is quite rough and I was given to a

106
00:05:42,870 --> 00:05:40,340
mentor teacher who was one of the best

107
00:05:46,719 --> 00:05:42,880
in the school at behavior management and

108
00:05:48,909 --> 00:05:46,729
thus she had the rougher classes and I

109
00:05:52,330 --> 00:05:48,919
went in thinking I can do this I'm going

110
00:05:54,760 --> 00:05:52,340
to be perfectly fine I I am a genius i

111
00:05:56,890 --> 00:05:54,770
can manage its no problem and i almost

112
00:06:00,580 --> 00:05:56,900
felt my practical because of that at one

113
00:06:02,320 --> 00:06:00,590

point leaving the school i had the

114

00:06:04,360 --> 00:06:02,330

thought to myself i have no bleeping

115

00:06:05,980 --> 00:06:04,370

clue what I'm doing because i honestly

116

00:06:10,300 --> 00:06:05,990

didn't i did not have the necessary

117

00:06:11,740 --> 00:06:10,310

experience or knowledge to do what I

118

00:06:13,180 --> 00:06:11,750

needed to do in that classroom and keep

119

00:06:15,700 --> 00:06:13,190

the students from killing each other or

120

00:06:18,760 --> 00:06:15,710

myself but that takes a quite a lot of

121

00:06:22,750 --> 00:06:18,770

insight into yourself to to realize that

122

00:06:25,750 --> 00:06:22,760

and and then to take steps to to fix it

123

00:06:27,760 --> 00:06:25,760

so to speak wouldn't you say it does

124

00:06:30,100 --> 00:06:27,770

take a lot it is quite possible to go

125

00:06:31,030 --> 00:06:30,110

into a spiral of self-doubt where you

126

00:06:33,880 --> 00:06:31,040

think

127

00:06:36,460 --> 00:06:33,890

do I know enough am i deluding myself

128

00:06:38,080 --> 00:06:36,470

into thinking I'm better than I am am i

129

00:06:40,780 --> 00:06:38,090

deluding myself into thinking I'm not

130

00:06:42,130 --> 00:06:40,790

good enough and you kind of have to work

131

00:06:43,960 --> 00:06:42,140

your way out of it I haven't actually

132

00:06:45,520 --> 00:06:43,970

read the research on that particular

133

00:06:47,560 --> 00:06:45,530

side of things but it is something that

134

00:06:49,990 --> 00:06:47,570

can happen but you do need to be able to

135

00:06:52,720 --> 00:06:50,000

look at yourself and think do I need to

136

00:06:54,340 --> 00:06:52,730

go to someone who knows better yeah

137

00:06:56,140 --> 00:06:54,350

definitely and I think that's a big part

138

00:06:59,400 --> 00:06:56,150

of what skepticism is isn't it it's

139

00:07:02,110 --> 00:06:59,410

recognizing that you don't know

140

00:07:04,660 --> 00:07:02,120

everything and also referring to the

141

00:07:08,020 --> 00:07:04,670

professionals in their field because

142

00:07:12,130 --> 00:07:08,030

that is their area of expertise exactly

143

00:07:14,710 --> 00:07:12,140

especially and that's why I wanted to do

144

00:07:17,110 --> 00:07:14,720

make do my talk he is simplifying it to

145

00:07:19,420 --> 00:07:17,120

their that the stupid the stupid are too

146

00:07:22,890 --> 00:07:19,430

stupid to know that they're stupid takes

147

00:07:26,560 --> 00:07:22,900

away from the actual meaning of it words

148

00:07:29,320 --> 00:07:26,570

you have this space to learn you need to

149

00:07:31,540 --> 00:07:29,330

be able to identify when you need to go

150

00:07:33,310 --> 00:07:31,550

and get help when when you should say I

151

00:07:34,900 --> 00:07:33,320

don't know I don't know enough to ask

152

00:07:35,980 --> 00:07:34,910

the right question I don't know enough

153

00:07:40,150 --> 00:07:35,990

to actually be able to do this correctly

154

00:07:42,450 --> 00:07:40,160

and simplifying it to it being about

155

00:07:45,280 --> 00:07:42,460

intelligence doesn't help either because

156

00:07:48,730 --> 00:07:45,290

intelligence is not a quantifiable thing

157

00:07:50,290 --> 00:07:48,740

and so that that whole experience that

158

00:07:55,120 --> 00:07:50,300

you had in the classroom that you

159

00:07:58,090 --> 00:07:55,130

described yesterday it did seem to be

160

00:08:00,910 --> 00:07:58,100

quite traumatic for you but also it kind

161

00:08:03,910 --> 00:08:00,920

of it appeared to be an epiphany for you

162

00:08:07,810 --> 00:08:03,920

in a way as well so what did you do in

163

00:08:11,470 --> 00:08:07,820

order to to learn what you had to do to

164

00:08:14,370 --> 00:08:11,480

get a classroom under control I learned

165

00:08:19,420 --> 00:08:14,380

to listen a lot more than I used to I

166

00:08:21,430 --> 00:08:19,430

went from thinking of everything as a

167

00:08:23,770 --> 00:08:21,440

suggestion to actually listening to

168

00:08:28,570 --> 00:08:23,780

expert advice and considering it expert

169

00:08:31,360 --> 00:08:28,580

advice and not simply arguing but trying

170

00:08:33,010 --> 00:08:31,370

to frame any argument as to why should I

171

00:08:34,270 --> 00:08:33,020

do this thing this way why should I

172

00:08:37,659 --> 00:08:34,280

consider it in the way you are telling

173

00:08:40,659 --> 00:08:37,669

me to can you maybe asking for

174

00:08:42,219 --> 00:08:40,669

clarification on the reasons for the

175

00:08:44,440 --> 00:08:42,229

expert advice and suggestions if I

176

00:08:47,140 --> 00:08:44,450

didn't understand why

177

00:08:49,060 --> 00:08:47,150

and also going it to a point where I am

178

00:08:51,910 --> 00:08:49,070

much more comfortable now admitting to

179

00:08:55,510 --> 00:08:51,920

myself I don't know enough there is more

180

00:08:58,930 --> 00:08:55,520

to learn and not skipping on anything

181

00:09:02,920 --> 00:08:58,940

someone who might know more than I will

182

00:09:05,110 --> 00:09:02,930

say and just as far as my own experience

183

00:09:07,690 --> 00:09:05,120

goes with people I i tend to respect

184

00:09:10,780 --> 00:09:07,700

people much more if they are able to

185

00:09:13,360 --> 00:09:10,790

take that step back and say I I don't

186

00:09:16,180 --> 00:09:13,370

know instead of making something up or

187

00:09:18,670 --> 00:09:16,190

pretending that they do know everything

188

00:09:21,340 --> 00:09:18,680

even if it is in their own area of

189

00:09:25,810 --> 00:09:21,350

expertise there's always something that

190

00:09:28,690 --> 00:09:25,820

you don't know very much so and sadly as

191

00:09:31,420 --> 00:09:28,700

Cassandra pointed out yesterday it can

192

00:09:33,340 --> 00:09:31,430

be a matter of ego some people aren't

193

00:09:35,110 --> 00:09:33,350

resilient enough or haven't trained

194

00:09:36,880 --> 00:09:35,120

themselves to be resilient enough to be

195

00:09:38,590 --> 00:09:36,890

able to take that hit or to their ego

196

00:09:41,100 --> 00:09:38,600

and admit in front of someone else or

197

00:09:44,020 --> 00:09:41,110

even to themselves now I don't know in

198

00:09:47,760 --> 00:09:44,030

whatever form that's going to take it

199

00:09:52,660 --> 00:09:47,770

takes a level of maturity do you think

200

00:09:53,950 --> 00:09:52,670

maturity yes and a lot of the tools that

201

00:09:55,840 --> 00:09:53,960

we skeptics use a lot of the

202

00:09:58,300 --> 00:09:55,850

metacognitive tools about being able to

203

00:10:01,480 --> 00:09:58,310

think and about how we think and process

204

00:10:04,870 --> 00:10:01,490

the information that we have well it was

205

00:10:07,270 --> 00:10:04,880

a very very good talk yesterday and

206

00:10:09,220 --> 00:10:07,280

thank you for your time on the skeptic

207

00:10:11,410 --> 00:10:09,230

zone I hope to see what more skeptics

208

00:10:16,590 --> 00:10:11,420

events in the future was my pleasure and

209

00:10:23,439 --> 00:10:20,489

hello everyone Heidi Robertson here

210

00:10:28,150 --> 00:10:23,449

every single day in the United States

211

00:10:31,269 --> 00:10:28,160

alone 22 ex servicemen and women take

212

00:10:34,569 --> 00:10:31,279

their own lives you may have seen a

213

00:10:38,189 --> 00:10:34,579

social media campaign found on twitter

214

00:10:40,989 --> 00:10:38,199

with the hashtag 22 push up challenge

215

00:10:44,289 --> 00:10:40,999

the idea is to raise awareness of the

216

00:10:47,979 --> 00:10:44,299

impact of PTSD post-traumatic stress

217

00:10:52,049 --> 00:10:47,989

disorder and suicide of the troops by

218

00:10:55,329 --> 00:10:52,059

during 22 push-ups every day for 22 days

219

00:11:00,009 --> 00:10:55,339

filming yourself and uploading it to

220

00:11:02,259 --> 00:11:00,019

social media each of those 22 days the

221

00:11:05,979 --> 00:11:02,269

idea is to nominate someone else to take

222

00:11:09,340 --> 00:11:05,989

up the challenge currently I'm at day 10

223

00:11:12,249 --> 00:11:09,350

of my 22 day challenge and feeling

224

00:11:14,109 --> 00:11:12,259

pretty saw a minor complaint compared

225

00:11:18,280 --> 00:11:14,119

with the pain and anguish of our

226

00:11:22,259 --> 00:11:18,290

veterans and their families today as I

227

00:11:25,769 --> 00:11:22,269

record on the 18th of August 2016 is

228

00:11:28,929 --> 00:11:25,779

Vietnam veterans day in Australia

229

00:11:32,499 --> 00:11:28,939

Australia had 60,000 troops in the

230

00:11:36,609 --> 00:11:32,509

Vietnam War and like the USA our rates

231

00:11:39,129 --> 00:11:36,619

of PTSD depression anxiety and suicide

232

00:11:45,189 --> 00:11:39,139

in our troops wherever they served are

233

00:11:47,139 --> 00:11:45,199

too high since 1999 49 Australian

234

00:11:52,090 --> 00:11:47,149

soldiers have been killed whilst on

235

00:11:57,159 --> 00:11:52,100

active duty while 239 have taken their

236

00:11:59,139 --> 00:11:57,169

own lives so if you can't manage full

237

00:12:01,269 --> 00:11:59,149

push-ups try them on your knees or

238

00:12:04,989 --> 00:12:01,279

standing and doing them against the

239

00:12:08,429 --> 00:12:04,999

kitchen bench alternatively many people

240

00:12:11,109 --> 00:12:08,439

are instead donating \$22 to

241

00:12:14,829 --> 00:12:11,119

organizations assisting veterans in

242

00:12:17,109 --> 00:12:14,839

various ways if none of those options

243

00:12:19,779 --> 00:12:17,119

are viable you can always raise

244

00:12:22,389 --> 00:12:19,789

awareness by simply talking about it and

245

00:12:25,779 --> 00:12:22,399

reaching out to someone who may be

246

00:12:28,419 --> 00:12:25,789

having mental health difficulties there

247

00:12:29,079 --> 00:12:28,429

is help out there if you are struggling

248

00:12:31,569 --> 00:12:29,089

yourself

249

00:12:45,239 --> 00:12:31,579

please don't give up seek some help

250

00:12:49,989 --> 00:12:47,499

we've just opened the quirkology

251
00:12:53,590 --> 00:12:49,999
exhibition at Edinburgh Smew ziam of

252
00:12:55,989 --> 00:12:53,600
childhood you can shrink in size see the

253
00:12:59,019 --> 00:12:55,999
amazing cylinders two squares illusion

254
00:13:04,150 --> 00:12:59,029
live watch all your favorite college

255
00:13:05,860 --> 00:13:04,160
Eclipse create your own illusions we

256
00:13:08,679 --> 00:13:05,870
never tasted by magician David

257
00:13:10,540 --> 00:13:08,689
Copperfield and lots more we can take

258
00:13:12,879 --> 00:13:10,550
the exhibition anywhere so if your

259
00:13:15,460 --> 00:13:12,889
Museum science center shopping mall or

260
00:13:24,900 --> 00:13:15,470
school get in touch for more information

261
00:13:32,630 --> 00:13:30,100
here's my not spooky action at the

262
00:13:37,170 --> 00:13:34,830
well as you know it's science wig

263
00:13:38,790 --> 00:13:37,180

Science Week all over this city people

264

00:13:40,050 --> 00:13:38,800

are going wild people going crazy people

265

00:13:42,030 --> 00:13:40,060

just going out there and getting that

266

00:13:44,400 --> 00:13:42,040

PhD as quickly as they possibly again

267

00:13:46,290 --> 00:13:44,410

i'm here at catherine at the australian

268

00:13:48,750 --> 00:13:46,300

museum wrap it at the top level now

269

00:13:51,450 --> 00:13:48,760

which is quite palatial having a coffee

270

00:13:52,830 --> 00:13:51,460

but you actually you've got a science

271

00:13:55,140 --> 00:13:52,840

festival t-shirt on so you know what's

272

00:13:56,880 --> 00:13:55,150

going on I sure do so I manage the

273

00:13:59,480 --> 00:13:56,890

Australian Museum science festival here

274

00:14:03,210 --> 00:13:59,490

in Sydney at the host Raleigh Museum and

275

00:14:04,890 --> 00:14:03,220

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

276

00:14:07,380 --> 00:14:04,900

looking forward to next week where we've

277

00:14:09,090 --> 00:14:07,390

got all the high school kids coming it's

278

00:14:11,040 --> 00:14:09,100

been very busy here so what have we got

279

00:14:12,630 --> 00:14:11,050

happening today we're doing a show for

280

00:14:14,820 --> 00:14:12,640

some kids are they primary school or

281

00:14:16,440 --> 00:14:14,830

high school so this week has been all

282

00:14:18,390 --> 00:14:16,450

the primary school we've already seen

283

00:14:20,640 --> 00:14:18,400

about 3,000 primary school kids come

284

00:14:22,530 --> 00:14:20,650

through the door another yelling that is

285

00:14:25,020 --> 00:14:22,540

a lot of yelling it's a lot of

286

00:14:28,500 --> 00:14:25,030

excitement so we have live animals so

287

00:14:32,310 --> 00:14:28,510

the kids get to meet Frank the 20

288

00:14:35,010 --> 00:14:32,320

frogmouth they get to hold lizards and a

289

00:14:37,590 --> 00:14:35,020

big snake which scares a few kids to

290

00:14:39,510 --> 00:14:37,600

have you got a Gibbon no don't have to

291

00:14:42,210 --> 00:14:39,520

give it the eight the apes are not

292

00:14:45,480 --> 00:14:42,220

represented I wouldn't say that aches

293

00:14:46,500 --> 00:14:45,490

are not represented that's true and look

294

00:14:49,320 --> 00:14:46,510

at the kids been a bit difficult

295

00:14:53,430 --> 00:14:49,330

sometimes kids can pull or push or hide

296

00:14:55,590 --> 00:14:53,440

the turtle no the kids have been really

297

00:14:58,590 --> 00:14:55,600

great it helps that the teachers are

298

00:15:00,690 --> 00:14:58,600

there with the kids but they've just

299

00:15:03,480 --> 00:15:00,700

been fantastic they've just really

300

00:15:04,950 --> 00:15:03,490

enjoyed every single workshop and every

301
00:15:07,290 --> 00:15:04,960
single show that they've attended today

302
00:15:08,910 --> 00:15:07,300
and catherine has someone who's seen a

303
00:15:10,920 --> 00:15:08,920
few things going on what do they seem to

304
00:15:13,140 --> 00:15:10,930
be the most interested in what's the one

305
00:15:17,010 --> 00:15:13,150
thing the kids go oh they're really up

306
00:15:19,740 --> 00:15:17,020
for it well one of my favorites is a the

307
00:15:22,590 --> 00:15:19,750
forensic science workshop so the stem

308
00:15:25,170 --> 00:15:22,600
reactor not the stem reactor and we've

309
00:15:28,200 --> 00:15:25,180
got another CSI our workshop which is

310
00:15:30,570 --> 00:15:28,210
run by some astronomers am educators and

311
00:15:33,030 --> 00:15:30,580
the kids get to dress up in a suit so

312
00:15:35,430 --> 00:15:33,040
they get to put on the same equipment

313
00:15:38,570 --> 00:15:35,440

that forensic police use and when they

314

00:15:41,430 --> 00:15:38,580

enter a crime scene and I get to do DNA

315

00:15:43,560 --> 00:15:41,440

fingerprinting which is great they also

316

00:15:45,750 --> 00:15:43,570

so they work in groups and there's a

317

00:15:48,240 --> 00:15:45,760

team leader there's a fingerprint expert

318

00:15:49,680 --> 00:15:48,250

there's a material expert and they get

319

00:15:51,510 --> 00:15:49,690

to work together to try and solve a

320

00:15:52,680 --> 00:15:51,520

crime so it's a very immersive and

321

00:15:54,030 --> 00:15:52,690

that's the whole thing about the Science

322

00:15:57,750 --> 00:15:54,040

Festival it's a very immersive

323

00:15:59,850 --> 00:15:57,760

experience for the kids to engage with a

324

00:16:03,330 --> 00:15:59,860

whole range of different science so this

325

00:16:05,220 --> 00:16:03,340

is forensic science but we've got every

326

00:16:07,830 --> 00:16:05,230

other science as well which is here

327

00:16:09,840 --> 00:16:07,840

today so physics and chemistry and I'm

328

00:16:11,850 --> 00:16:09,850

happened have you got a PhD have you

329

00:16:14,610 --> 00:16:11,860

been to uni or less or thing I have been

330

00:16:16,500 --> 00:16:14,620

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

331

00:16:18,660 --> 00:16:16,510

are you working on so when I went to

332

00:16:21,330 --> 00:16:18,670

university I do the science

333

00:16:26,780 --> 00:16:21,340

communications degree and it's like

334

00:16:29,070 --> 00:16:26,790

ology degree oh ok so dad will me um

335

00:16:31,590 --> 00:16:29,080

narcissist you're looking at me you're

336

00:16:33,990 --> 00:16:31,600

thinking narcissist or sociopath what

337

00:16:36,960 --> 00:16:34,000

are you thinking here I wouldn't want to

338

00:16:39,570 --> 00:16:36,970

disclose on radio yes yep she can't tell

339

00:16:41,340 --> 00:16:39,580

you she knows she just can't tell you um

340

00:16:42,750 --> 00:16:41,350

so does it make it actually having that

341

00:16:44,550 --> 00:16:42,760

the critters that make it difficult when

342

00:16:48,060 --> 00:16:44,560

you meet people because you go on psych

343

00:16:52,620 --> 00:16:48,070

101 Europe mmm I mean everybody's in the

344

00:16:56,730 --> 00:16:52,630

DSM even you are in the dsm-5 that is

345

00:16:59,310 --> 00:16:56,740

Jay um I think we've a psychology degree

346

00:17:03,330 --> 00:16:59,320

it's you do get a greater understanding

347

00:17:04,950 --> 00:17:03,340

and I use a lot of what I've learnt for

348

00:17:08,100 --> 00:17:04,960

this fester for it for instance because

349

00:17:10,710 --> 00:17:08,110

we I did child development so I know

350

00:17:12,690 --> 00:17:10,720

what stage the children are at all so

351
00:17:14,340 --> 00:17:12,700
what type of learning styles we should

352
00:17:16,050 --> 00:17:14,350
be using for the different types of kids

353
00:17:18,330 --> 00:17:16,060
so they're showing museum we're all

354
00:17:22,580 --> 00:17:18,340
about informal learning and immersive

355
00:17:24,490 --> 00:17:22,590
learning and we treat every individual

356
00:17:26,530 --> 00:17:24,500
differently okay

357
00:17:27,970 --> 00:17:26,540
what do you think the next step here

358
00:17:30,400 --> 00:17:27,980
for the museum is there something you'd

359
00:17:32,350 --> 00:17:30,410
like to see them do here for the next

360
00:17:35,050 --> 00:17:32,360
step for Science Week next year's or

361
00:17:37,090 --> 00:17:35,060
something yeah we should do that funny

362
00:17:40,510 --> 00:17:37,100
you mention that and there is that's

363
00:17:44,370 --> 00:17:40,520

alive I mean at the moment ya been so

364

00:17:47,800 --> 00:17:44,380

good um but there is a lot of potential

365

00:17:51,100 --> 00:17:47,810

of including even more workshops and

366

00:17:54,370 --> 00:17:51,110

shows we do have over three but actually

367

00:17:56,680 --> 00:17:54,380

I 405 different workshops over the two

368

00:17:59,650 --> 00:17:56,690

weeks and we have 50 organizations

369

00:18:01,960 --> 00:17:59,660

coming from all over Australia

370

00:18:03,790 --> 00:18:01,970

presenting which is fantastic but what I

371

00:18:06,120 --> 00:18:03,800

would personally like to see you next

372

00:18:08,950 --> 00:18:06,130

year is having some more international

373

00:18:10,030 --> 00:18:08,960

collaborations so yesterday I met up

374

00:18:12,840 --> 00:18:10,040

with the director of the New Zealand

375

00:18:15,010 --> 00:18:12,850

Science Festival and we're talking about

376

00:18:17,230 --> 00:18:15,020

us being part of their festival and

377

00:18:19,450 --> 00:18:17,240

having some indigenous science because

378

00:18:21,340 --> 00:18:19,460

one of our big focus is here over the

379

00:18:23,920 --> 00:18:21,350

two weeks is indigenous science and

380

00:18:26,440 --> 00:18:23,930

having their Maori science educators

381

00:18:28,240 --> 00:18:26,450

coming and giving a different cultural

382

00:18:31,300 --> 00:18:28,250

aspect of their science that they use in

383

00:18:33,720 --> 00:18:31,310

New Zealand and there's so many other

384

00:18:37,360 --> 00:18:33,730

partnerships and collaborations that I

385

00:18:39,400 --> 00:18:37,370

would love to investigate for next year

386

00:18:40,750 --> 00:18:39,410

you can learn from everyone no matter

387

00:18:43,300 --> 00:18:40,760

what you know where they're from

388

00:18:44,230 --> 00:18:43,310

everybody has a story and you can well

389

00:18:46,480 --> 00:18:44,240

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

390

00:18:48,460 --> 00:18:46,490

this week here really so we're going to

391

00:18:51,190 --> 00:18:48,470

be confronting some primary school

392

00:18:52,810 --> 00:18:51,200

students down there mo yes we have a lot

393

00:18:54,490 --> 00:18:52,820

of primary school kids and that's

394

00:18:57,400 --> 00:18:54,500

important teachers to corral them there

395

00:18:58,810 --> 00:18:57,410

we do have some teachers the good thing

396

00:19:01,060 --> 00:18:58,820

and back listener this is a good thing

397

00:19:03,010 --> 00:19:01,070

when promise cool kids come in it's a

398

00:19:03,820 --> 00:19:03,020

bit different to when high school kids

399

00:19:05,650 --> 00:19:03,830

come in because I've noticed

400

00:19:07,780 --> 00:19:05,660

particularly if it's a private girls

401
00:19:09,520 --> 00:19:07,790
school from year 11 or year 12 there

402
00:19:11,800 --> 00:19:09,530
like a bit oh I don't want to appear

403
00:19:15,730 --> 00:19:11,810
uncool but Primus cool kids they're like

404
00:19:17,950 --> 00:19:15,740
oh I want to talk exactly I that's why I

405
00:19:21,400 --> 00:19:17,960
really loved looking after the primary

406
00:19:23,260 --> 00:19:21,410
school kids but even those though the

407
00:19:25,420 --> 00:19:23,270
year 11 and 12 they look like they're

408
00:19:26,860 --> 00:19:25,430
not having fun even their in their

409
00:19:29,200 --> 00:19:26,870
cliques I don't want to appear uncool

410
00:19:31,660 --> 00:19:29,210
they don't want to be article but I've

411
00:19:33,940 --> 00:19:31,670
talked to quite a lot after workshop so

412
00:19:35,830 --> 00:19:33,950
I because I came from a science teaching

413
00:19:36,780 --> 00:19:35,840

background so i was doing shows all

414

00:19:38,520 --> 00:19:36,790

around Australia

415

00:19:41,520 --> 00:19:38,530

around Scotland all around England for a

416

00:19:43,260 --> 00:19:41,530

while and so what I've found specially

417

00:19:46,020 --> 00:19:43,270

teaching and I love teaching the high

418

00:19:47,970 --> 00:19:46,030

school students because you do all these

419

00:19:48,960 --> 00:19:47,980

things and you get Blake faces because

420

00:19:50,880 --> 00:19:48,970

they don't want to show that they're

421

00:19:53,280 --> 00:19:50,890

really excited they talked to them after

422

00:19:55,230 --> 00:19:53,290

wouldn't like wow that was amazing we

423

00:19:57,300 --> 00:19:55,240

want to be a scientist like you we want

424

00:20:00,420 --> 00:19:57,310

to get more involved what can we study

425

00:20:03,480 --> 00:20:00,430

to do whatever particular science that I

426
00:20:05,640 --> 00:20:03,490
was teaching that day and so even though

427
00:20:09,600 --> 00:20:05,650
they don't emotionally show it because

428
00:20:14,490 --> 00:20:09,610
they want to be cool yeah I gave a been

429
00:20:17,310 --> 00:20:14,500
cool years ago frankly no point I I

430
00:20:20,430 --> 00:20:17,320
think they know you're still in there

431
00:20:22,020 --> 00:20:20,440
you're doing fine but I gave up yeah so

432
00:20:25,290 --> 00:20:22,030
what I would recommend to the listeners

433
00:20:27,930 --> 00:20:25,300
is a thank you keep that in a child keep

434
00:20:31,040 --> 00:20:27,940
learning keep experiencing and living

435
00:20:33,030 --> 00:20:31,050
life to the fullest we're here at the

436
00:20:34,440 --> 00:20:33,040
Australian Museum we're just waiting to

437
00:20:36,630 --> 00:20:34,450
go in and do the mystery investigators

438
00:20:39,180 --> 00:20:36,640

show it's a primary school crowd would

439

00:20:43,040 --> 00:20:39,190

be working to today mr. Saunders primary

440

00:20:45,750 --> 00:20:43,050

school age groups that's something like

441

00:20:47,820 --> 00:20:45,760

ten eight and eleven twelve eleven

442

00:20:49,380 --> 00:20:47,830

twelve thirteen year old kids are you

443

00:20:51,480 --> 00:20:49,390

know but they will have a teacher with

444

00:20:52,830 --> 00:20:51,490

them and the thing is that if you're

445

00:20:56,580 --> 00:20:52,840

saying something just say really loudly

446

00:20:58,770 --> 00:20:56,590

and they believe you that's true and

447

00:21:00,480 --> 00:20:58,780

I've said to you today that you can have

448

00:21:02,660 --> 00:21:00,490

it up a bit more not that you ever ham

449

00:21:05,460 --> 00:21:02,670

it up and use your trombone yep using

450

00:21:07,740 --> 00:21:05,470

cardboard is an element obviously stuff

451
00:21:10,140 --> 00:21:07,750
like that there's hydrogen and cardboard

452
00:21:11,400 --> 00:21:10,150
and obviously hydrogen in cardboard you

453
00:21:13,020 --> 00:21:11,410
say it loud like that they believe you

454
00:21:14,790 --> 00:21:13,030
don't know what they all say what's an

455
00:21:16,260 --> 00:21:14,800
element I'm very disappointed there's a

456
00:21:17,760 --> 00:21:16,270
few animals that you can play with here

457
00:21:19,860 --> 00:21:17,770
in the museum but as I have mentioned

458
00:21:22,140 --> 00:21:19,870
book there's no Gibbons there's no given

459
00:21:24,330 --> 00:21:22,150
to play with at the Australian is in

460
00:21:26,490 --> 00:21:24,340
we're sitting under the skeleton of a

461
00:21:27,470 --> 00:21:26,500
giant whale or all whales a pretty big I

462
00:21:29,860 --> 00:21:27,480
suppose hell

463
00:21:34,010 --> 00:21:29,870

and over your shoulder there there's a

464

00:21:36,260 --> 00:21:34,020

buffalo and a bear and an armadillo well

465

00:21:37,820 --> 00:21:36,270

and I see our doors open here so we get

466

00:21:40,610 --> 00:21:37,830

we'd better get our bed of nails ready

467

00:21:42,770 --> 00:21:40,620

our door is open but all the kids from

468

00:21:44,690 --> 00:21:42,780

the previous show or the show just

469

00:21:46,040 --> 00:21:44,700

finish haven't streamed out yet but

470

00:21:49,100 --> 00:21:46,050

there are a lot of kids running around

471

00:21:52,760 --> 00:21:49,110

the hall here that's true yelling

472

00:21:54,920 --> 00:21:52,770

Buffalo Wow see I thought it was just a

473

00:21:57,380 --> 00:21:54,930

na cherry song but there it is Buffalo

474

00:21:59,810 --> 00:21:57,390

now that the previous kids are now

475

00:22:01,460 --> 00:21:59,820

streaming out of the Hofstra theater so

476
00:22:03,230 --> 00:22:01,470
in about two minutes we'll be able to go

477
00:22:07,700 --> 00:22:03,240
in set up the mission investigators and

478
00:22:09,860 --> 00:22:07,710
we'll take it from there we've just done

479
00:22:11,600 --> 00:22:09,870
the first mystery investigators show of

480
00:22:13,130 --> 00:22:11,610
the day we're just waiting for the

481
00:22:15,470 --> 00:22:13,140
second one to come in how do you think

482
00:22:18,620 --> 00:22:15,480
we first show and Richard my mic is on

483
00:22:20,750 --> 00:22:18,630
so my price is ok well I can I can just

484
00:22:22,750 --> 00:22:20,760
tell you it went well it went very well

485
00:22:25,280 --> 00:22:22,760
when well it's ok I won't turn my mic

486
00:22:28,100 --> 00:22:25,290
yeah it was a big audience and they were

487
00:22:29,840 --> 00:22:28,110
really well behaved a group of boys in

488
00:22:32,090 --> 00:22:29,850

fact you and if I get to be confused

489

00:22:33,620 --> 00:22:32,100

when they picked the water even if they

490

00:22:35,450 --> 00:22:33,630

have three goes at it went on pixel

491

00:22:44,680 --> 00:22:35,460

water they know it does work oddly

492

00:22:48,590 --> 00:22:46,790

I'll have a go and you can display

493

00:22:50,090 --> 00:22:48,600

what's happening okay now it looks like

494

00:22:51,860 --> 00:22:50,100

you're doing some sort of fractal thing

495

00:22:53,390 --> 00:22:51,870

here Richard what are you doing I'm

496

00:22:56,060 --> 00:22:53,400

looking how it looks like you're shaving

497

00:22:57,830 --> 00:22:56,070

of the mouse that's that's a very

498

00:23:02,690 --> 00:22:57,840

extreme closeup of my face well you

499

00:23:04,400 --> 00:23:02,700

right oh so we can do that and then

500

00:23:05,960 --> 00:23:04,410

imagine that we've got all sorts of skin

501
00:23:08,510 --> 00:23:05,970
cancers this is that this keep you

502
00:23:10,910 --> 00:23:08,520
amused all afternoon that's one way to

503
00:23:12,980 --> 00:23:10,920
save me oh that that's what I'd do

504
00:23:15,320 --> 00:23:12,990
immediately I would use that and go yeah

505
00:23:17,980 --> 00:23:15,330
I'm gonna die there's my palm print you

506
00:23:20,150 --> 00:23:17,990
see so what we have here is we've got a

507
00:23:22,610 --> 00:23:20,160
magnifying device set up to a computer

508
00:23:24,260 --> 00:23:22,620
and pressed against my skin with some

509
00:23:27,290 --> 00:23:24,270
lights and we can see an extreme

510
00:23:29,420 --> 00:23:27,300
close-up of the pores of my skin yeah

511
00:23:34,100 --> 00:23:29,430
and for the listener it's best described

512
00:23:35,720 --> 00:23:34,110
as there well come on I mean I don't

513
00:23:37,300 --> 00:23:35,730

think anyone's skin up that close is

514

00:23:39,680 --> 00:23:37,310

going to be a portrait of porcelain

515

00:23:42,830 --> 00:23:39,690

let's look at my watch look at that time

516

00:23:44,540 --> 00:23:42,840

sticking by Wow yet also yeah that's

517

00:23:46,310 --> 00:23:44,550

true yeah when you do look at that it

518

00:23:47,870 --> 00:23:46,320

just goes to explain why shouldn't spend

519

00:23:52,100 --> 00:23:47,880

so much on watches because any what's

520

00:23:54,140 --> 00:23:52,110

even that close looks crappy look I'll

521

00:23:55,610 --> 00:23:54,150

actually talk to someone who has talked

522

00:23:58,970 --> 00:23:55,620

to somebody knows yes I believe this

523

00:24:01,040 --> 00:23:58,980

person has been to a particular place

524

00:24:03,050 --> 00:24:01,050

for more than a day like I did who we

525

00:24:05,060 --> 00:24:03,060

got him where you from my name is

526

00:24:07,280 --> 00:24:05,070

Allison from the university of

527

00:24:08,780 --> 00:24:07,290

technology sydney sorry my voice is a

528

00:24:09,710 --> 00:24:08,790

little bit quirky that's okay cause

529

00:24:11,990 --> 00:24:09,720

you've been talking to people about

530

00:24:13,880 --> 00:24:12,000

science all day today and what you've

531

00:24:15,860 --> 00:24:13,890

been hoping to educate them with with

532

00:24:18,230 --> 00:24:15,870

the magnifying on the computer screen

533

00:24:20,240 --> 00:24:18,240

there just to show them that under the

534

00:24:22,730 --> 00:24:20,250

microscope the whole world completely

535

00:24:24,060 --> 00:24:22,740

changes oh yeah when it comes to one

536

00:24:26,220 --> 00:24:24,070

perspective

537

00:24:28,020 --> 00:24:26,230

the the microscope is completely

538

00:24:29,490 --> 00:24:28,030

different one and that your whole

539

00:24:32,400 --> 00:24:29,500

perspective on things can completely

540

00:24:34,140 --> 00:24:32,410

change and what you normally think of

541

00:24:36,720 --> 00:24:34,150

something can be completely different to

542

00:24:39,060 --> 00:24:36,730

what you initially had thought and so a

543

00:24:40,260 --> 00:24:39,070

blue circle may be completely different

544

00:24:42,090 --> 00:24:40,270

under the microscope and that is

545

00:24:44,400 --> 00:24:42,100

different pigments of different colors

546

00:24:45,930 --> 00:24:44,410

making that blew that's quite a good

547

00:24:48,090 --> 00:24:45,940

scientific lesson to make and of course

548

00:24:49,890 --> 00:24:48,100

even compared to when people talk about

549

00:24:52,830 --> 00:24:49,900

quantum stuff this is still a major

550

00:24:56,430 --> 00:24:52,840

macrovision yeah yeah so it's definitely

551
00:24:57,660 --> 00:24:56,440
not the strongest of magnification but

552
00:24:59,160 --> 00:24:57,670
it does give a little bit more of an

553
00:25:01,260 --> 00:24:59,170
insight to kids who want to know more

554
00:25:03,210 --> 00:25:01,270
about it what do they normally see most

555
00:25:04,590 --> 00:25:03,220
surprised about is that they put it on

556
00:25:05,730 --> 00:25:04,600
their face or their fingerprint or what

557
00:25:07,380 --> 00:25:05,740
do they normally look and they go I

558
00:25:09,300 --> 00:25:07,390
would not change what seems to be

559
00:25:11,640 --> 00:25:09,310
blowing their mind today it's definitely

560
00:25:13,890 --> 00:25:11,650
skin because when we look at different

561
00:25:17,490 --> 00:25:13,900
people's skin it just looks quite smooth

562
00:25:19,110 --> 00:25:17,500
and just quite normal but under the

563
00:25:22,110 --> 00:25:19,120

microscope there's definitely definitely

564

00:25:24,630 --> 00:25:22,120

all these different cracks and pigments

565

00:25:26,880 --> 00:25:24,640

of colors some people like to look at

566

00:25:29,310 --> 00:25:26,890

their freckles and little bumps and it

567

00:25:31,920 --> 00:25:29,320

just looks so strange and out of this

568

00:25:33,660 --> 00:25:31,930

world sometimes you look but for a major

569

00:25:35,040 --> 00:25:33,670

hypochondriac like me like i said i

570

00:25:36,570 --> 00:25:35,050

think i could use those be going oh yeah

571

00:25:38,220 --> 00:25:36,580

that's a cancer that's a gantlet that's

572

00:25:40,440 --> 00:25:38,230

cancer that's that pimples gonna kill me

573

00:25:42,210 --> 00:25:40,450

all that's all stuff you know some

574

00:25:45,660 --> 00:25:42,220

people look at bombs and think oh my god

575

00:25:47,100 --> 00:25:45,670

what is that and lots of courses have

576

00:25:48,450 --> 00:25:47,110

you been talking about the people might

577

00:25:50,190 --> 00:25:48,460

be interested at UTS could you have

578

00:25:51,390 --> 00:25:50,200

quite a range of courses there for

579

00:25:53,190 --> 00:25:51,400

someone who wants to get into energy

580

00:25:54,690 --> 00:25:53,200

sciences because what's your favorite

581

00:25:56,400 --> 00:25:54,700

you'd obviously have been playing a

582

00:25:58,680 --> 00:25:56,410

favorite here wouldn't you yes so I've

583

00:26:00,870 --> 00:25:58,690

done medical science so the biologies

584

00:26:02,580 --> 00:26:00,880

are definitely my favorite but out of

585

00:26:05,270 --> 00:26:02,590

the things that we have in our stand we

586

00:26:09,630 --> 00:26:05,280

have different examples of physics maths

587

00:26:12,050 --> 00:26:09,640

biology and so all the people have come

588

00:26:15,660 --> 00:26:12,060

here we've definitely be talking about

589

00:26:17,790 --> 00:26:15,670

the medical sciences applied physics and

590

00:26:19,410 --> 00:26:17,800

chemistry okay and here on the skeptic

591

00:26:21,300 --> 00:26:19,420

zone I do like to ask people what took

592

00:26:22,980 --> 00:26:21,310

them down there tertiary education track

593

00:26:24,570 --> 00:26:22,990

what why did you get interested in

594

00:26:26,280 --> 00:26:24,580

biology why didn't you go into something

595

00:26:27,270 --> 00:26:26,290

a bit more static like geology or

596

00:26:29,670 --> 00:26:27,280

something like that

597

00:26:31,830 --> 00:26:29,680

well when I got into it I just realized

598

00:26:34,110 --> 00:26:31,840

I love learning about the human body and

599

00:26:36,030 --> 00:26:34,120

just how our body works it's something

600

00:26:38,640 --> 00:26:36,040

we normally take for granted how we work

601
00:26:41,040 --> 00:26:38,650
how we breathe how we eat and when we

602
00:26:42,990 --> 00:26:41,050
know more about it we begin to

603
00:26:45,330 --> 00:26:43,000
appreciate a lot more of our bodies and

604
00:26:47,520 --> 00:26:45,340
just how we take care of it what's the

605
00:26:49,350 --> 00:26:47,530
thing that fascinates you most about the

606
00:26:50,820 --> 00:26:49,360
human body in the way it does itself is

607
00:26:53,160 --> 00:26:50,830
it there is that the reproduction

608
00:26:57,080 --> 00:26:53,170
digestion is a particular area where go

609
00:26:59,370 --> 00:26:57,090
that's amazing to be up to be honest um

610
00:27:01,440 --> 00:26:59,380
everything about it because the whole

611
00:27:03,420 --> 00:27:01,450
body works in unison you learn of the

612
00:27:06,240 --> 00:27:03,430
different systems but then you realize

613
00:27:08,370 --> 00:27:06,250

that one thing isn't depend on

614

00:27:11,400 --> 00:27:08,380

independent of each other they all work

615

00:27:14,160 --> 00:27:11,410

together and without one of them another

616

00:27:17,520 --> 00:27:14,170

doesn't work and so it becomes this very

617

00:27:19,740 --> 00:27:17,530

complete thing that sometimes looks

618

00:27:22,560 --> 00:27:19,750

really fliegel but also really resilient

619

00:27:25,920 --> 00:27:22,570

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

620

00:27:29,090 --> 00:27:25,930

people realize just how easy it is for

621

00:27:31,200 --> 00:27:29,100

our bodies to stop working but also how

622

00:27:33,570 --> 00:27:31,210

amazing the body look at the first place

623

00:27:35,790 --> 00:27:33,580

yeah it's just like the things that

624

00:27:38,520 --> 00:27:35,800

happen in our body that makes things why

625

00:27:40,890 --> 00:27:38,530

is this incredible it's the word

626

00:27:42,450 --> 00:27:40,900

symbiosis away to explain everything

627

00:27:44,850 --> 00:27:42,460

works in rhythm or is that a bad example

628

00:27:46,920 --> 00:27:44,860

no notice precisely how it works just

629

00:27:49,380 --> 00:27:46,930

from the different systems to the

630

00:27:51,170 --> 00:27:49,390

different cells to the different even

631

00:27:53,550 --> 00:27:51,180

the back to how the bacteria of

632

00:27:55,530 --> 00:27:53,560

functions to help our body and sometimes

633

00:27:57,690 --> 00:27:55,540

hurt us yeah because we just can't go

634

00:27:59,550 --> 00:27:57,700

around the whole stack of bacteria most

635

00:28:01,320 --> 00:27:59,560

of it as harmless to us isn't it exactly

636

00:28:03,480 --> 00:28:01,330

so some would say that we're more

637

00:28:05,550 --> 00:28:03,490

bacteria than human given that we have a

638

00:28:07,500 --> 00:28:05,560

lot more bacteria but people who like

639

00:28:08,910 --> 00:28:07,510

bacteria say that I think you'd find

640

00:28:10,770 --> 00:28:08,920

that it's people who work in the

641

00:28:12,900 --> 00:28:10,780

bacterial sciences they always say and

642

00:28:14,250 --> 00:28:12,910

stuff like that I mean I think viruses

643

00:28:15,960 --> 00:28:14,260

like you know no one ever has a good

644

00:28:18,600 --> 00:28:15,970

word for them but the bacteria people

645

00:28:19,960 --> 00:28:18,610

they're always push in that bacteria

646

00:28:23,710 --> 00:28:19,970

definitely has

647

00:28:25,180 --> 00:28:23,720

a good side to our story but of course

648

00:28:28,480 --> 00:28:25,190

they definitely have a bad side but I

649

00:28:31,080 --> 00:28:28,490

didn't think viruses have will play a

650

00:28:34,300 --> 00:28:31,090

particularly good role in our daily life

651
00:28:35,770 --> 00:28:34,310
compared to bacteria anyway look look so

652
00:28:37,120 --> 00:28:35,780
have a kind word for bacteria

653
00:28:38,710 --> 00:28:37,130
occasionally people lift your game on

654
00:28:39,940 --> 00:28:38,720
that department thanks a lot for

655
00:28:41,920 --> 00:28:39,950
chatting to us and where can we find out

656
00:28:43,360 --> 00:28:41,930
more about UTS online or more of the

657
00:28:44,860 --> 00:28:43,370
courses and that sort of thing if you're

658
00:28:49,120 --> 00:28:44,870
thinking well maybe I might do some

659
00:28:51,340 --> 00:28:49,130
science in my life so at the moment the

660
00:28:53,590 --> 00:28:51,350
beers sort of help would probably be a

661
00:28:56,260 --> 00:28:53,600
UTS open day which is on August

662
00:28:58,570 --> 00:28:56,270
twenty-ninth I think and that way

663
00:29:01,420 --> 00:28:58,580

everyone can come into the university

664

00:29:04,480 --> 00:29:01,430

and check out firsthand the courses and

665

00:29:07,540 --> 00:29:04,490

academics that are available there and

666

00:29:10,900 --> 00:29:07,550

what's your website UTS calm day you

667

00:29:13,240 --> 00:29:10,910

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

668

00:29:14,800 --> 00:29:13,250

just go to google and click utes and

669

00:29:17,260 --> 00:29:14,810

protect and particularly the course that

670

00:29:19,060 --> 00:29:17,270

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

671

00:29:20,530 --> 00:29:19,070

come to the University you can get a

672

00:29:21,700 --> 00:29:20,540

core staff from right have a good day

673

00:29:23,560 --> 00:29:21,710

here I'll let you get back to your

674

00:29:48,049 --> 00:29:23,570

magnifying glass and scaring people bye

675

00:29:54,690 --> 00:29:52,019

dr. Harriet hall md known to thousands

676

00:29:56,940 --> 00:29:54,700

as the skeptic a retired family

677

00:30:00,060 --> 00:29:56,950

physician and former Air Force flight

678

00:30:01,379 --> 00:30:00,070

surgeon she writes about medicine so

679

00:30:04,980 --> 00:30:01,389

called complementary and alternative

680

00:30:08,310 --> 00:30:04,990

medicine science hackery and critical

681

00:30:10,590 --> 00:30:08,320

thinking Harriet now has a free course a

682

00:30:13,639 --> 00:30:10,600

series of ten video lectures on science

683

00:30:16,379 --> 00:30:13,649

based medicine and alternative medicine

684

00:30:18,629 --> 00:30:16,389

the videos and an accompanying course

685

00:30:22,740 --> 00:30:18,639

guide can be found by following the link

686

00:30:26,759 --> 00:30:22,750

at skeptic info or by visiting web

687

00:30:31,110 --> 00:30:26,769

Randy's org slash educational dash

688

00:30:34,230 --> 00:30:31,120

modules dot HTML topics covered in the

689

00:30:37,340 --> 00:30:34,240

series are science-based medicine vs.

690

00:30:40,759 --> 00:30:37,350

evidence-based medicine what is cam

691

00:30:43,950 --> 00:30:40,769

chiropractic acupuncture homeopathy

692

00:30:46,080 --> 00:30:43,960

naturopathy and herbal medicine energy

693

00:30:49,230 --> 00:30:46,090

medicine miscellaneous alternatives

694

00:30:52,549 --> 00:30:49,240

pitfalls in research and science-based

695

00:30:55,289 --> 00:30:52,559

medicine in the media and politics

696

00:30:57,840 --> 00:30:55,299

Harriet covers each topic in a matter of

697

00:31:22,640 --> 00:30:57,850

fact no-nonsense way that shorter

698

00:31:28,110 --> 00:31:25,020

thank you for listening to the skeptic

699

00:31:30,299 --> 00:31:28,120

zone get well soon Richard I do hope

700

00:31:33,090 --> 00:31:30,309

you're skeptical kittens are looking

701
00:31:36,000 --> 00:31:33,100
after you I don't have any skeptical

702
00:31:41,430 --> 00:31:36,010
cats I'm afraid just a rather credulous

703
00:31:45,210 --> 00:31:41,440
dog who nevertheless says hello and I

704
00:31:47,250 --> 00:31:45,220
must apologize for probably making you

705
00:31:49,860 --> 00:31:47,260
feel a bit nor nauseated this morning

706
00:31:52,350 --> 00:31:49,870
Richard when I told you I was standing

707
00:31:55,770 --> 00:31:52,360
in the pharmacy looking at homeopathic

708
00:32:01,200 --> 00:31:55,780
teething gel for babies and rows and

709
00:32:05,400 --> 00:32:01,210
rows of ear candles yep still on the

710
00:32:07,190 --> 00:32:05,410
shelves but for this week this is highly

711
00:32:10,080 --> 00:32:07,200
robertson from the Northern Rivers

712
00:32:12,270 --> 00:32:10,090
vaccination supporters signing off from

713
00:32:19,110 --> 00:32:12,280

the beautiful northern rivers of New

714

00:32:21,630 --> 00:32:19,120

South Wales you've been listening to the

715

00:32:25,440 --> 00:32:21,640

skeptics own podcast visit our website

716

00:32:28,740 --> 00:32:25,450

at wwc a petting zoo TV for contacts an

717

00:32:31,890 --> 00:32:28,750

archive of all episodes since 2008 and

718

00:32:33,960 --> 00:32:31,900

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719

00:32:37,320 --> 00:32:33,970

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720

00:32:40,830 --> 00:32:37,330

at skeptic zone liking us on facebook

721

00:32:42,330 --> 00:32:40,840

and leaving a review on iTunes you can

722

00:32:46,169 --> 00:32:42,340

also show your support by subscribing

723

00:32:49,200 --> 00:32:46,179

via paypal for as little as 99 cents a

724

00:32:50,850 --> 00:32:49,210

week the skeptic zone is an independent

725

00:32:53,310 --> 00:32:50,860

production the views and opinions

726

00:32:54,900 --> 00:32:53,320

expressed on the skeptic zone are not

727

00:32:57,780 --> 00:32:54,910

necessarily those of Australian