

Show 514

THE
**SKEPTIC
ZONE**
PODCAST

www.skepticzone.tv

26 August 2018



Stephen Barrett, M.D.
from Quackwatch

Speed Meet the Scientists
at the Powerhouse Museum #2

Skeptics Award for
Critical Thinking in Journalism

Maynard's Spooky Action....
The launch of Science Week #3



1
00:00:09,080 --> 00:00:05,920

[Music]

2
00:00:11,840 --> 00:00:09,090

welcome to the skeptic zone the podcast

3
00:00:13,910 --> 00:00:11,850

from Australia for science and reason

4
00:00:16,880 --> 00:00:13,920

[Music]

5
00:00:22,910 --> 00:00:16,890

[Applause]

6
00:00:26,780 --> 00:00:22,920

[Music]

7
00:00:30,890 --> 00:00:26,790

the skeptic zone podcast episode number

8
00:00:33,510 --> 00:00:30,900

514 for the 26th of august 2018

9
00:00:37,650 --> 00:00:33,520

Richardson is here with you for me at

10
00:00:39,960 --> 00:00:37,660

last a rainy Sydney Australia coming up

11
00:00:42,900 --> 00:00:39,970

on this week's show a special interview

12
00:00:45,930 --> 00:00:42,910

with Stephen Barrett MD one of the

13
00:00:48,510 --> 00:00:45,940

people behind quack watch quack watch a

14

00:00:51,720 --> 00:00:48,520

wonderful resource for skeptics and the

15

00:00:56,250 --> 00:00:51,730

well non skeptics alike I guess covering

16

00:00:58,140 --> 00:00:56,260

no end of quackery from acupuncture to

17

00:01:01,320 --> 00:00:58,150

homeopathy all the classics all the

18

00:01:03,450 --> 00:01:01,330

classics are there in detail a wonderful

19

00:01:04,799 --> 00:01:03,460

website I'll be speaking to Stephen

20

00:01:07,740 --> 00:01:04,809

Barrett about why he put that together

21

00:01:09,660 --> 00:01:07,750

and some of his other concerns coming up

22

00:01:12,630 --> 00:01:09,670

at the top of the show Steven Barrett MD

23

00:01:15,180 --> 00:01:12,640

from quack watch and I must say a big

24

00:01:17,640 --> 00:01:15,190

thank you to Jeff gehlbach who helped me

25

00:01:21,300 --> 00:01:17,650

arrange this interview with Stephen

26

00:01:24,420 --> 00:01:21,310

Barrett following that part 2 of speed

27

00:01:26,010 --> 00:01:24,430

meet the scientists here in Sydney a

28

00:01:29,040 --> 00:01:26,020

couple of weeks ago at the Powerhouse

29

00:01:31,950 --> 00:01:29,050

Museum they had a wonderful open to the

30

00:01:33,900 --> 00:01:31,960

public night evening with a room full of

31

00:01:36,210 --> 00:01:33,910

scientists and I was running around with

32

00:01:38,790 --> 00:01:36,220

my microphone meeting as many as

33

00:01:42,020 --> 00:01:38,800

possible part two this week and part

34

00:01:44,760 --> 00:01:42,030

three next week coming up on this week's

35

00:01:45,750 --> 00:01:44,770

segment of speed meet the scientists

36

00:01:49,770 --> 00:01:45,760

we're going to be learning about

37

00:01:54,690 --> 00:01:49,780

hitchhiking crustaceans decomposing

38

00:01:56,610 --> 00:01:54,700

bodies and fecal matter yeah and I'm

39

00:01:58,980 --> 00:01:56,620

sure you'll agree with me that the young

40

00:02:01,560 --> 00:01:58,990

scientists I'm speaking to are certainly

41

00:02:04,350 --> 00:02:01,570

inspiring and interesting after that

42

00:02:06,780 --> 00:02:04,360

news of the wallaby no not the

43

00:02:09,059 --> 00:02:06,790

Australian rugby union team oh dear they

44

00:02:11,460 --> 00:02:09,069

were thrashed by the All Blacks just

45

00:02:13,979 --> 00:02:11,470

last night no the wallaby award from the

46

00:02:16,050 --> 00:02:13,989

Australian skeptics for journalism it's

47

00:02:18,149 --> 00:02:16,060

a new award are we going to be

48

00:02:20,520 --> 00:02:18,159

presenting this at the convention this

49

00:02:23,100 --> 00:02:20,530

year find out what the wallaby is all

50

00:02:25,199 --> 00:02:23,110

about a bit later on in the show then to

51
00:02:27,210 --> 00:02:25,209
round up the show its main out back at

52
00:02:30,059 --> 00:02:27,220
the Australian Museum with part three of

53
00:02:32,940 --> 00:02:30,069
his meeting the scientists tonight he

54
00:02:35,730 --> 00:02:32,950
speaks to various people including Ruben

55
00:02:38,160 --> 00:02:35,740
Reuben the surfing scientist and also

56
00:02:42,199 --> 00:02:38,170
meets a goanna yes

57
00:02:45,479 --> 00:02:42,209
Joanna it was very big but very nice

58
00:02:46,949 --> 00:02:45,489
Joanna the goanna now before we get

59
00:02:48,630 --> 00:02:46,959
stuck into the show a little reminder

60
00:02:50,370 --> 00:02:48,640
about the upcoming convention I know

61
00:02:52,290 --> 00:02:50,380
I've been reminding you a lot about the

62
00:02:55,790 --> 00:02:52,300
upcoming convention but I'd like to tell

63
00:02:59,180 --> 00:02:55,800

you about the Friday evening welcome

64

00:03:03,449 --> 00:02:59,190

event and this will be on the 12th of

65

00:03:04,979 --> 00:03:03,459

October at the Occidental hotel which is

66

00:03:06,449 --> 00:03:04,989

in when you'd sydney now Sydney

67

00:03:09,030 --> 00:03:06,459

listeners who come to skeptics in the

68

00:03:11,100 --> 00:03:09,040

pub will know this pub very well every

69

00:03:13,470 --> 00:03:11,110

month and listeners to the show will

70

00:03:14,699 --> 00:03:13,480

know of course we have may not doing

71

00:03:19,050 --> 00:03:14,709

interviews from skeptics in the pub

72

00:03:23,039 --> 00:03:19,060

every month normally we're on either one

73

00:03:25,080 --> 00:03:23,049

or two levels of this pub well this this

74

00:03:26,880 --> 00:03:25,090

event the Friday evening welcome event

75

00:03:29,370 --> 00:03:26,890

we're going to be taking over two levels

76

00:03:31,800 --> 00:03:29,380

one level will be for those who'd like

77

00:03:35,789 --> 00:03:31,810

to have a sit-down meal and chat to

78

00:03:36,270 --> 00:03:35,799

other skeptics and take part in a trivia

79

00:03:38,520 --> 00:03:36,280

night

80

00:03:39,750 --> 00:03:38,530

now some months ago we had a sceptical

81

00:03:42,000 --> 00:03:39,760

trivia night at skeptics in the pub

82

00:03:45,569 --> 00:03:42,010

which was a great success well this time

83

00:03:47,430 --> 00:03:45,579

it's a general trivia night so a great

84

00:03:50,039 --> 00:03:47,440

opportunity to meet and mingle with

85

00:03:53,520 --> 00:03:50,049

other skeptics and enjoy some trivia and

86

00:03:56,280 --> 00:03:53,530

this event is free absolutely freak

87

00:03:59,670 --> 00:03:56,290

please come along Friday to 12th from 6

88

00:04:01,860 --> 00:03:59,680

p.m. at the Occidental hotel and if

89

00:04:04,229 --> 00:04:01,870

you'd like to come along just RSVP at

90

00:04:06,990 --> 00:04:04,239

skeptics comdata you slash event slash

91

00:04:09,569 --> 00:04:07,000

national - convention or just click the

92

00:04:10,920 --> 00:04:09,579

link in this week's show notes and that

93

00:04:13,020 --> 00:04:10,930

page will also give you the opportunity

94

00:04:16,080 --> 00:04:13,030

to buy your normal convention tickets

95

00:04:20,300 --> 00:04:16,090

and the dinner the gala three-course

96

00:04:23,640 --> 00:04:20,310

dinner on the 13th of October

97

00:04:25,020 --> 00:04:23,650

including beverages oh yes and that's

98

00:04:27,090 --> 00:04:25,030

we'll have entertainment and the

99

00:04:29,760 --> 00:04:27,100

skeptics Awards while I'm looking

100

00:04:31,400 --> 00:04:29,770

forward to all of that and joining us

101

00:04:35,310 --> 00:04:31,410

for the trivia night will be presenters

102

00:04:38,219 --> 00:04:35,320

Lara Benham and Maynard but now it's

103

00:04:38,820 --> 00:04:38,229

time for me to run downstairs run into

104

00:04:41,730 --> 00:04:38,830

the cupboard

105

00:04:42,690 --> 00:04:41,740

come on open the door run downstairs run

106

00:04:45,690 --> 00:04:42,700

into the carpet I wonder where those

107

00:04:46,690 --> 00:04:45,700

cats are they were on the promotion this

108

00:04:51,210 --> 00:04:46,700

week I thought they'd be

109

00:04:53,290 --> 00:04:51,220

here hmm time for me to run downstairs

110

00:04:57,430 --> 00:04:53,300

making sure I don't trip over the cats

111

00:05:01,060 --> 00:04:57,440

have some have some butterscotch pudding

112

00:05:04,300 --> 00:05:01,070

this week Thank You Trish hmm come back

113

00:05:23,200 --> 00:05:04,310

upstairs and bring you the skipping zone

114

00:05:25,640 --> 00:05:23,210

[Music]

115

00:05:27,800 --> 00:05:25,650

joining me now all the way from

116

00:05:29,890 --> 00:05:27,810

beautiful North Carolina is a man I'd

117

00:05:32,900 --> 00:05:29,900

wanted to chat to for a very long time

118

00:05:35,720 --> 00:05:32,910

it's the one of the people behind the

119

00:05:38,810 --> 00:05:35,730

incredibly useful and successful quack

120

00:05:42,590 --> 00:05:38,820

watch website Stephan Barratt MD hello

121

00:05:46,280 --> 00:05:42,600

Steven hi returned really nice to talk

122

00:05:49,250 --> 00:05:46,290

with you I've been advising my listeners

123

00:05:51,800 --> 00:05:49,260

for over 10 years now or about 10 years

124

00:05:53,090 --> 00:05:51,810

about quack watch and suggesting that

125

00:05:55,670 --> 00:05:53,100

they go they're running little

126

00:05:58,300 --> 00:05:55,680

promotions for it it's nice to talk to

127

00:06:00,530 --> 00:05:58,310

someone someone behind a quack watch

128

00:06:03,159 --> 00:06:00,540

first of all for the benefit of our

129

00:06:08,180 --> 00:06:03,169

listeners what's your your background

130

00:06:10,520 --> 00:06:08,190

I'm a retired psychiatrist that is I

131

00:06:12,740 --> 00:06:10,530

went to medical school and then took

132

00:06:17,690 --> 00:06:12,750

specialty training in psychiatry I

133

00:06:22,250 --> 00:06:17,700

practiced for a total of 35 years but in

134

00:06:25,150 --> 00:06:22,260

the late 1960s I got interested in the

135

00:06:26,960 --> 00:06:25,160

field of misinformation and deception

136

00:06:29,600 --> 00:06:26,970

anything to do with that

137

00:06:33,409 --> 00:06:29,610

and my interest gradually grew to the

138

00:06:35,980 --> 00:06:33,419

point where in the mid 1970s I started

139

00:06:41,210 --> 00:06:35,990

cutting down my psychiatric time and

140

00:06:44,480 --> 00:06:41,220

began investigating I soon found that

141

00:06:47,240 --> 00:06:44,490

the media were not particularly

142

00:06:50,540 --> 00:06:47,250

interested in what I was finding so I

143

00:06:53,990 --> 00:06:50,550

decided that in order to have a good

144

00:06:58,180 --> 00:06:54,000

outlet for what I was learning I would

145

00:07:00,680 --> 00:06:58,190

have to do some writing myself and so I

146

00:07:03,260 --> 00:07:00,690

learned how to write and became a writer

147

00:07:08,710 --> 00:07:03,270

and hooked up with a very interested

148

00:07:12,500 --> 00:07:08,720

publisher put out a lot of books and

149

00:07:14,690 --> 00:07:12,510

began to get noticed

150

00:07:17,900 --> 00:07:14,700

I had quite a bit of influence I think

151

00:07:20,930 --> 00:07:17,910

during the 1980s I had made a lot of

152

00:07:22,909 --> 00:07:20,940

talk show appearances and had articles

153

00:07:24,790 --> 00:07:22,919

published here and there and then when

154

00:07:28,670 --> 00:07:24,800

the internet came along

155

00:07:31,279 --> 00:07:28,680

it was very interesting for me because

156

00:07:33,800 --> 00:07:31,289

it used to take months to do an

157

00:07:35,749 --> 00:07:33,810

investigation on now sometimes you can

158

00:07:40,399 --> 00:07:35,759

do an investigation in a couple of hours

159

00:07:44,559 --> 00:07:40,409

so right I greatly expanded what I look

160

00:07:48,830 --> 00:07:44,569

at and of course the Reach is enormous

161

00:07:51,619 --> 00:07:48,840

it truly is and I must say that and I'm

162

00:07:53,809 --> 00:07:51,629

sure my listeners know who have visited

163

00:07:56,719 --> 00:07:53,819

quack watch that the website itself and

164

00:08:00,589 --> 00:07:56,729

how it's grown but the site itself is an

165

00:08:02,959 --> 00:08:00,599

enormous resource for quackery and

166

00:08:05,330 --> 00:08:02,969

looking into this sort of thing just

167

00:08:08,450 --> 00:08:05,340

looking down the list of topics

168

00:08:11,170 --> 00:08:08,460

mentioned it is extensive and I've

169

00:08:13,459 --> 00:08:11,180

visited this site quite regularly

170

00:08:15,379 --> 00:08:13,469

features about acupuncture to

171

00:08:17,600 --> 00:08:15,389

chiropractic to all sorts of things

172

00:08:19,490 --> 00:08:17,610

Chinese medicine it just goes on and on

173

00:08:21,409 --> 00:08:19,500

and on and really you have to scroll and

174

00:08:25,550 --> 00:08:21,419

scroll and scroll and scroll there's so

175

00:08:28,399 --> 00:08:25,560

many items there but it says right at

176

00:08:30,680 --> 00:08:28,409

the top one of the points that makes out

177

00:08:35,180 --> 00:08:30,690

is this site is a network isn't it it's

178

00:08:40,490 --> 00:08:35,190

a network of people yes well I it's not

179

00:08:44,569 --> 00:08:40,500

a formal network I get mail from people

180

00:08:47,060 --> 00:08:44,579

all over the world every day I used to

181

00:08:49,340 --> 00:08:47,070

get things in my mail my physical

182

00:08:51,880 --> 00:08:49,350

mailbox now I get emails saying hey

183

00:08:54,710 --> 00:08:51,890

would you look at this or I wrote that

184

00:08:57,620 --> 00:08:54,720

could you share it could you write about

185

00:08:59,509 --> 00:08:57,630

it could you investigate hey I read

186

00:09:02,480 --> 00:08:59,519

something about that you wrote and here

187

00:09:05,960 --> 00:09:02,490

some more information so basically every

188

00:09:09,290 --> 00:09:05,970

page is really a living potentially a

189

00:09:11,329 --> 00:09:09,300

living article where people can send new

190

00:09:14,120 --> 00:09:11,339

information and they could also correct

191

00:09:16,519 --> 00:09:14,130

me one of the nice things about about

192

00:09:18,680 --> 00:09:16,529

the Internet is that if you happen to

193

00:09:21,710 --> 00:09:18,690

make something it happened to say

194

00:09:24,350 --> 00:09:21,720

something wrong you can be corrected and

195

00:09:26,389 --> 00:09:24,360

you can be updated and that's really

196

00:09:30,319 --> 00:09:26,399

it's just great because it contributes

197

00:09:32,210 --> 00:09:30,329

to to accuracy you're absolutely right

198

00:09:34,340 --> 00:09:32,220

and of course this is an underpinning of

199

00:09:37,040 --> 00:09:34,350

the scientific method but I guess in

200

00:09:37,910 --> 00:09:37,050

your case particularly it can be an

201
00:09:39,920 --> 00:09:37,920

interesting

202
00:09:42,590 --> 00:09:39,930

a bit of a quagmire because not only

203
00:09:44,329 --> 00:09:42,600

will people write in periodically to

204
00:09:48,170 --> 00:09:44,339

correct you which is a good thing with

205
00:09:50,090 --> 00:09:48,180

new and better information but I imagine

206
00:09:53,449 --> 00:09:50,100

you would get your fair share of people

207
00:09:56,120 --> 00:09:53,459

wanting to correct you to their point of

208
00:09:58,550 --> 00:09:56,130

view in other words attacking some of

209
00:10:03,530 --> 00:09:58,560

the the articles on your website you

210
00:10:06,680 --> 00:10:03,540

must get lots of in emails like that the

211
00:10:08,509 --> 00:10:06,690

mail is probably more positive then then

212
00:10:10,819 --> 00:10:08,519

the emails are more positive than

213
00:10:14,180 --> 00:10:10,829

negative I don't actually get a

214

00:10:17,660 --> 00:10:14,190

tremendous amount of of criticisms or or

215

00:10:19,579 --> 00:10:17,670

nasty mail not sure why that is now I

216

00:10:22,069 --> 00:10:19,589

don't have a bulletin board on many

217

00:10:25,040 --> 00:10:22,079

websites you people can post information

218

00:10:30,350 --> 00:10:25,050

I couldn't possibly do that because then

219

00:10:34,040 --> 00:10:30,360

I would get a tremendous amount of hate

220

00:10:36,230 --> 00:10:34,050

messages I know that would happen I

221

00:10:39,860 --> 00:10:36,240

don't need that I wouldn't even have

222

00:10:41,840 --> 00:10:39,870

time to read them all you're absolutely

223

00:10:45,410 --> 00:10:41,850

right you're absolutely right you

224

00:10:47,150 --> 00:10:45,420

wouldn't because I mean I know even here

225

00:10:49,009 --> 00:10:47,160

at the skeptic zone podcast I'll get

226

00:10:50,960 --> 00:10:49,019

people writing and accusing me of being

227

00:10:53,780 --> 00:10:50,970

nothing more than a skill for big

228

00:10:56,449 --> 00:10:53,790

pharmaceutical companies or or whatever

229

00:10:58,970 --> 00:10:56,459

the case may be so there I'm glad that

230

00:11:02,810 --> 00:10:58,980

most of your feedback is positive that's

231

00:11:06,259 --> 00:11:02,820

a very encouraging sign and it one of

232

00:11:10,069 --> 00:11:06,269

the more interesting segments on your

233

00:11:12,560 --> 00:11:10,079

website I find is the 26 ways you've

234

00:11:14,540 --> 00:11:12,570

written to spot quackery and that's a

235

00:11:17,689 --> 00:11:14,550

that must have come about after years of

236

00:11:20,900 --> 00:11:17,699

looking into quackery well actually it

237

00:11:25,880 --> 00:11:20,910

was developed by Victor Herbert who was

238

00:11:28,309 --> 00:11:25,890

a one of the main people fighting

239

00:11:33,470 --> 00:11:28,319

quackery in the 1970s he had a lot of

240

00:11:36,309 --> 00:11:33,480

ideas and I met him in the early 1970s

241

00:11:39,800 --> 00:11:36,319

and we worked out the article together

242

00:11:42,470 --> 00:11:39,810

since that time I've only added a few

243

00:11:45,530 --> 00:11:42,480

actually he really did a comprehensive

244

00:11:49,180 --> 00:11:45,540

job and as I say I added a few things so

245

00:11:51,320 --> 00:11:49,190

um but we have others that we have

246

00:11:53,630 --> 00:11:51,330

probably at least

247

00:11:56,300 --> 00:11:53,640

thirty or forty other things that can

248

00:11:59,210 --> 00:11:56,310

make you suspicious and again those were

249

00:12:02,030 --> 00:11:59,220

developed gradually but the basic

250

00:12:04,190 --> 00:12:02,040

information really hasn't changed that

251
00:12:07,880 --> 00:12:04,200
much the basic idea is to try to

252
00:12:10,550 --> 00:12:07,890
undermine your credibility and I just

253
00:12:13,550 --> 00:12:10,560
love the one about how people conclude

254
00:12:16,460 --> 00:12:13,560
that they just absolutely know that I'm

255
00:12:18,829 --> 00:12:16,470
in the pocket of drug companies or I'm

256
00:12:21,019 --> 00:12:18,839
this with drug companies and that with

257
00:12:24,740 --> 00:12:21,029
drug companies I just love to hear that

258
00:12:25,519 --> 00:12:24,750
this how do they know they seem so

259
00:12:29,780 --> 00:12:25,529
certain

260
00:12:35,210 --> 00:12:29,790
because in their mind if you attack my

261
00:12:36,949 --> 00:12:35,220
ideas you're part of an enemy and the

262
00:12:38,650 --> 00:12:36,959
fact is with me and drug companies I'm

263
00:12:41,180 --> 00:12:38,660

no friend to drug companies so I

264

00:12:44,509 --> 00:12:41,190

appreciate the fact that they make good

265

00:12:47,329 --> 00:12:44,519

drugs but I'm very concerned about about

266

00:12:49,730 --> 00:12:47,339

their economic practices i I'm part of a

267

00:12:52,579 --> 00:12:49,740

team and in the United States they're

268

00:12:55,220 --> 00:12:52,589

trying very hard to impress the lower

269

00:12:58,360 --> 00:12:55,230

drug prices I think the prices of many

270

00:13:02,180 --> 00:12:58,370

drugs are just absolutely outrageous

271

00:13:04,190 --> 00:13:02,190

yeah absolutely right and I can't help

272

00:13:05,930 --> 00:13:04,200

that just glancing right now as we're

273

00:13:08,510 --> 00:13:05,940

speaking I'm glancing across this page

274

00:13:09,740 --> 00:13:08,520

the 26 ways to spot quackery and I

275

00:13:12,920 --> 00:13:09,750

certainly recommend this page

276

00:13:15,680 --> 00:13:12,930

specifically to our listeners and we

277

00:13:18,260 --> 00:13:15,690

would look at things as what we might

278

00:13:19,550 --> 00:13:18,270

call red flags they claim that natural

279

00:13:22,220 --> 00:13:19,560

vitamins are better than synthetic

280

00:13:24,650 --> 00:13:22,230

vitamins there's another red flag is

281

00:13:26,660 --> 00:13:24,660

people who go on about fluoride and

282

00:13:28,819 --> 00:13:26,670

things like that so this is I think this

283

00:13:30,380 --> 00:13:28,829

is a great grounding Stevan for people

284

00:13:34,069 --> 00:13:30,390

interested in this may be new to

285

00:13:36,530 --> 00:13:34,079

skepticism or wanting to do research

286

00:13:38,990 --> 00:13:36,540

it's it's a great way to start but again

287

00:13:42,740 --> 00:13:39,000

folks I just keep saying the site itself

288

00:13:45,889 --> 00:13:42,750

the site itself is extensive many many

289

00:13:47,930 --> 00:13:45,899

hours and years of course of work goes

290

00:13:51,290 --> 00:13:47,940

into that but tell me Steven in your

291

00:13:53,360 --> 00:13:51,300

opinion of all the quackery all the

292

00:13:54,800 --> 00:13:53,370

quacks out there what do you think is

293

00:13:59,630 --> 00:13:54,810

the most urgent or one of the most

294

00:14:03,500 --> 00:13:59,640

pressing for us to to look at there's

295

00:14:04,579 --> 00:14:03,510

really no answer to that because what

296

00:14:07,800 --> 00:14:04,589

you have is

297

00:14:11,069 --> 00:14:07,810

huge numbers of people are being misled

298

00:14:13,259 --> 00:14:11,079

to make small mistakes and smaller

299

00:14:15,360 --> 00:14:13,269

numbers of people are being misled to

300

00:14:18,150 --> 00:14:15,370

make very big and sometimes very

301
00:14:19,889 --> 00:14:18,160
dangerous mistakes and so which is more

302
00:14:24,000 --> 00:14:19,899
important I don't concern myself with

303
00:14:25,949 --> 00:14:24,010
that I write about what's convenient for

304
00:14:29,430 --> 00:14:25,959
me to write about if I get some good

305
00:14:32,519 --> 00:14:29,440
information I don't care if it's an

306
00:14:34,440 --> 00:14:32,529
obscure problem or not if I can write

307
00:14:36,960 --> 00:14:34,450
something about it with because I have

308
00:14:39,150 --> 00:14:36,970
the information then that becomes a

309
00:14:41,280 --> 00:14:39,160
priority but there are certain things

310
00:14:45,329 --> 00:14:41,290
that really concern me if we get away

311
00:14:46,860 --> 00:14:45,339
from what's most - you know what's the

312
00:14:52,170 --> 00:14:46,870
biggest problems the things that concern

313
00:14:57,410 --> 00:14:52,180

me one thing in particular just annoys

314

00:15:01,920 --> 00:14:57,420

me and that is the the huge market in

315

00:15:04,319 --> 00:15:01,930

quack devices that supposedly can figure

316

00:15:07,680 --> 00:15:04,329

out what's wrong with you and recommend

317

00:15:11,810 --> 00:15:07,690

what you should do about it what bothers

318

00:15:15,630 --> 00:15:11,820

me is that is that the government

319

00:15:19,740 --> 00:15:15,640

agencies don't seem to think that

320

00:15:21,540 --> 00:15:19,750

there's any reason to do any kind of

321

00:15:25,949 --> 00:15:21,550

systematic regulation there have been

322

00:15:29,069 --> 00:15:25,959

maybe 30 or so regulatory actions

323

00:15:32,220 --> 00:15:29,079

throughout the world toward these kinds

324

00:15:35,310 --> 00:15:32,230

of fake diagnostic devices but nobody

325

00:15:38,610 --> 00:15:35,320

seems to want to do anything systematic

326

00:15:41,160 --> 00:15:38,620

and I've complained to the US Food and

327

00:15:45,900 --> 00:15:41,170

Drug Administration for 30 years about

328

00:15:48,120 --> 00:15:45,910

one particular type of device and they

329

00:15:50,340 --> 00:15:48,130

don't seem to care and I run the

330

00:15:52,560 --> 00:15:50,350

standard and it annoys me greatly

331

00:15:55,110 --> 00:15:52,570

because there are tens of thousands of

332

00:15:58,100 --> 00:15:55,120

these devices in use in the United

333

00:16:01,259 --> 00:15:58,110

States and probably at least that many

334

00:16:05,069 --> 00:16:01,269

throughout throughout the civilized

335

00:16:08,759 --> 00:16:05,079

world you know you put your hand on a on

336

00:16:11,449 --> 00:16:08,769

a these most of the devices are our

337

00:16:15,300 --> 00:16:11,459

electrical things like galvanometers and

338

00:16:18,000 --> 00:16:15,310

supposedly can take your pick up some

339

00:16:21,120 --> 00:16:18,010

kind of body energy

340

00:16:23,070 --> 00:16:21,130

translate that into problems throughout

341

00:16:26,250 --> 00:16:23,080

the body and what you ought to do about

342

00:16:29,540 --> 00:16:26,260

it just absolute complete craziness and

343

00:16:32,130 --> 00:16:29,550

and yet the machines are there

344

00:16:35,130 --> 00:16:32,140

occasionally the FDA actually allows

345

00:16:35,850 --> 00:16:35,140

them to be sold and the enforcement is

346

00:16:40,050 --> 00:16:35,860

very weak

347

00:16:42,660 --> 00:16:40,060

I hear you because here in Australia

348

00:16:44,550 --> 00:16:42,670

I've come across one myself in the

349

00:16:46,830 --> 00:16:44,560

Australian skeptics have seen this one

350

00:16:48,680 --> 00:16:46,840

it's called the Metatron I don't know if

351

00:16:53,130 --> 00:16:48,690

you've heard about the Metatron

352

00:16:56,220 --> 00:16:53,140

nonlinear scanning or L or n LS scanning

353

00:16:57,960 --> 00:16:56,230

it's a device which is a it's on a

354

00:17:02,880 --> 00:16:57,970

laptop computer you put on a pair of

355

00:17:05,880 --> 00:17:02,890

headphones and apparently this program

356

00:17:07,950 --> 00:17:05,890

will send waveforms through your body

357

00:17:09,990 --> 00:17:07,960

which will read your organs and display

358

00:17:12,420 --> 00:17:10,000

them on the screen and offer you health

359

00:17:18,530 --> 00:17:12,430

advice after that down to the level of

360

00:17:21,060 --> 00:17:18,540

DNA it's quite something well if you can

361

00:17:24,480 --> 00:17:21,070

get me an article I'll be happy to put

362

00:17:31,350 --> 00:17:24,490

it on my device watch website by the way

363

00:17:34,980 --> 00:17:31,360

i i i run approximately 22 or 23 sites

364

00:17:37,020 --> 00:17:34,990

i like to have long indexes i like to

365

00:17:39,300 --> 00:17:37,030

have lists of people that people can

366

00:17:41,580 --> 00:17:39,310

look at that's why my home pages have so

367

00:17:43,830 --> 00:17:41,590

much so many different topics i like

368

00:17:46,500 --> 00:17:43,840

when people come i don't know if they

369

00:17:48,510 --> 00:17:46,510

know what to look for so i i want them

370

00:17:51,060 --> 00:17:48,520

to be able to look at a list so when I

371

00:17:54,660 --> 00:17:51,070

get lots of articles on a particular

372

00:17:57,150 --> 00:17:54,670

topic I start another website and I've

373

00:18:01,200 --> 00:17:57,160

been doing that I think I'm finished but

374

00:18:05,100 --> 00:18:01,210

I have I think it's 23 sites and many of

375

00:18:08,610 --> 00:18:05,110

them specialize in one kind of topic or

376

00:18:11,340 --> 00:18:08,620

another but if you can I can certainly

377

00:18:13,350 --> 00:18:11,350

mention that if you email me or if you

378

00:18:16,350 --> 00:18:13,360

haven't an article I can post I'll be

379

00:18:18,270 --> 00:18:16,360

very happy to to post it but stop and

380

00:18:23,160 --> 00:18:18,280

think for stop and think for a moment

381

00:18:26,790 --> 00:18:23,170

how can people believe that the the

382

00:18:29,100 --> 00:18:26,800

simplest line of logic would be if the

383

00:18:30,810 --> 00:18:29,110

device worked it would be making

384

00:18:31,770 --> 00:18:30,820

headlines everywhere and whoever

385

00:18:35,130 --> 00:18:31,780

invented it

386

00:18:37,710 --> 00:18:35,140

would get the Nobel Prize and it doesn't

387

00:18:40,049 --> 00:18:37,720

happen so reasoning backwards it doesn't

388

00:18:43,440 --> 00:18:40,059

work and that's a to me that's just

389

00:18:45,990 --> 00:18:43,450

simple logic well I can't help the

390

00:18:48,049 --> 00:18:46,000

degree but I would say to you when I've

391

00:18:50,850 --> 00:18:48,059

seen this in operation at various

392

00:18:54,799 --> 00:18:50,860

mind/body/spirit festivals and such like

393

00:18:57,090 --> 00:18:54,809

it looks science II and to the average

394

00:18:58,830 --> 00:18:57,100

person in the state who comes in and

395

00:19:00,840 --> 00:18:58,840

does not have a science or medical

396

00:19:02,250 --> 00:19:00,850

background and they're told it works

397

00:19:05,250 --> 00:19:02,260

they hooked after this thing and they

398

00:19:08,340 --> 00:19:05,260

can see their internal organs really

399

00:19:10,590 --> 00:19:08,350

they don't question it and they very

400

00:19:13,680 --> 00:19:10,600

happily hand over their money but thank

401
00:19:15,180 --> 00:19:13,690
you for the offer I shall certainly send

402
00:19:18,720 --> 00:19:15,190
you the information I have on this

403
00:19:21,090 --> 00:19:18,730
device and maybe it can end up on your

404
00:19:22,669 --> 00:19:21,100
website I certainly can link if nothing

405
00:19:25,500 --> 00:19:22,679
else yeah sure

406
00:19:27,260 --> 00:19:25,510
well Stephen what a what a pleasure it's

407
00:19:29,789 --> 00:19:27,270
been to chat with you again I've been

408
00:19:33,090 --> 00:19:29,799
promoting quack watch now for many years

409
00:19:37,289 --> 00:19:33,100
on the skeptics own podcast folks the

410
00:19:39,690 --> 00:19:37,299
website is quack watch.org I sincerely

411
00:19:41,870 --> 00:19:39,700
recommend it for seasoned skeptics or

412
00:19:44,039 --> 00:19:41,880
people who are new to skepticism any

413
00:19:46,740 --> 00:19:44,049

medical doctors out there this should be

414

00:19:48,990 --> 00:19:46,750

a regular thing for you to visit as well

415

00:19:51,630 --> 00:19:49,000

well Stephen Barrett all the way from

416

00:19:53,909 --> 00:19:51,640

beautiful North Carolina many many

417

00:19:56,220 --> 00:19:53,919

thanks for your time on the sceptic zone

418

00:19:58,710 --> 00:19:56,230

quite quite welcome by the way I should

419

00:20:02,010 --> 00:19:58,720

mention that I also have a free weekly

420

00:20:04,649 --> 00:20:02,020

newsletter which which some people may

421

00:20:07,289 --> 00:20:04,659

find interesting folks there's the clue

422

00:20:09,270 --> 00:20:07,299

head over to quack watchdog and sign up

423

00:20:11,530 --> 00:20:09,280

again Stephen thank you very much well

424

00:20:29,360 --> 00:20:11,540

thank you

425

00:20:29,370 --> 00:20:33,290

[Music]

426

00:20:40,120 --> 00:20:33,560

[Applause]

427

00:20:45,440 --> 00:20:44,840

hey Richard hi Trish hi would you like a

428

00:20:46,880 --> 00:20:45,450

coffee

429

00:20:49,190 --> 00:20:46,890

yeah thanks what are you working on I'm

430

00:20:51,470 --> 00:20:49,200

trying to come up with a new promo to

431

00:20:54,470 --> 00:20:51,480

play on the sceptic zone who's it for

432

00:20:57,200 --> 00:20:54,480

the good thinking Society in the UK you

433

00:20:58,970 --> 00:20:57,210

know the oh yeah I know them the guys

434

00:21:01,070 --> 00:20:58,980

who recently chased the homeopaths out

435

00:21:03,140 --> 00:21:01,080

of the UK public health system oh did

436

00:21:04,310 --> 00:21:03,150

they yeah they campaigned and lobbied

437

00:21:07,460 --> 00:21:04,320

government for a while and now you

438

00:21:08,810 --> 00:21:07,470

cannot get homeopathy on the NHS so they

439

00:21:11,030 --> 00:21:08,820

can now spend public money on health

440

00:21:14,090 --> 00:21:11,040

care that works right look I'll mention

441

00:21:18,320 --> 00:21:14,100

that in the promo now their website is

442

00:21:19,820 --> 00:21:18,330

good thinking Society org and that

443

00:21:22,520 --> 00:21:19,830

website is a good resource for learning

444

00:21:24,080 --> 00:21:22,530

more about quackery thanks Trish that

445

00:21:30,040 --> 00:21:24,090

gives me something good to think about

446

00:21:44,000 --> 00:21:40,570

[Music]

447

00:21:46,820 --> 00:21:44,010

and now we bring you part two of speed

448

00:21:49,190 --> 00:21:46,830

meat the scientists held at the

449

00:21:56,450 --> 00:21:49,200

Powerhouse Museum here in Sydney during

450

00:21:58,280 --> 00:21:56,460

science week 2018 I've come to the next

451

00:22:00,410 --> 00:21:58,290

table along here who do we have here

452

00:22:02,780 --> 00:22:00,420

hi my name is dr. Haley Green I'm from

453

00:22:04,750 --> 00:22:02,790

Western Sydney University my area of

454

00:22:07,940 --> 00:22:04,760

research is in forensic anthropology

455

00:22:11,570 --> 00:22:07,950

basically what we do is look at the body

456

00:22:14,240 --> 00:22:11,580

after death particularly skeletons or

457

00:22:17,690 --> 00:22:14,250

parts of skeletons that are discovered

458

00:22:20,120 --> 00:22:17,700

and we look at the clues in the bones -

459

00:22:22,900 --> 00:22:20,130

to create a profile to help investigate

460

00:22:25,340 --> 00:22:22,910

as a starting point so we can look at

461

00:22:26,720 --> 00:22:25,350

features that weren't determine sex of

462

00:22:28,730 --> 00:22:26,730

an individual - whether they're male or

463

00:22:30,980 --> 00:22:28,740

female roughly how old they were at the

464

00:22:32,690 --> 00:22:30,990

time of death and potentially ancestry

465

00:22:35,510 --> 00:22:32,700

so the ancestral background just from

466

00:22:38,840 --> 00:22:35,520

their skeletal remains so part of my

467

00:22:40,220 --> 00:22:38,850

research is looking at newly dead so

468

00:22:41,870 --> 00:22:40,230

bodies in various stages of

469

00:22:43,580 --> 00:22:41,880

decomposition to look at time since

470

00:22:45,530 --> 00:22:43,590

death analysis and then use the

471

00:22:47,060 --> 00:22:45,540

skeletonized remains for more of an

472

00:22:49,100 --> 00:22:47,070

identification or assisting with

473

00:22:52,070 --> 00:22:49,110

identification what a fascinating area

474

00:22:54,830 --> 00:22:52,080

and of course a great help to police

475

00:22:58,100 --> 00:22:54,840

amongst other things and for my very

476
00:23:01,370 --> 00:22:58,110
limited knowledge on this area I believe

477
00:23:03,560 --> 00:23:01,380
that things like insects are very

478
00:23:05,450 --> 00:23:03,570
important and you can judge things on

479
00:23:06,860 --> 00:23:05,460
the development of larvae and things

480
00:23:08,930 --> 00:23:06,870
like that yeah that's correct so that's

481
00:23:10,910 --> 00:23:08,940
called forensic entomology so we do have

482
00:23:12,860 --> 00:23:10,920
some very high profile entomologist in

483
00:23:15,890 --> 00:23:12,870
New South Wales in particular you're

484
00:23:17,450 --> 00:23:15,900
looking at the various larval stages and

485
00:23:19,340 --> 00:23:17,460
what they call succession so when the

486
00:23:22,220 --> 00:23:19,350
adults come and lay their eggs and how

487
00:23:25,040 --> 00:23:22,230
the the gonna be very graphic the

488
00:23:26,540 --> 00:23:25,050

maggots the larvae digest the remains

489

00:23:28,040 --> 00:23:26,550

and they can use those growth patterns

490

00:23:29,030 --> 00:23:28,050

to sort of determine how long the bodies

491

00:23:30,980 --> 00:23:29,040

have been there so that's really useful

492

00:23:34,100 --> 00:23:30,990

for the the first couple of weeks after

493

00:23:36,680 --> 00:23:34,110

death so that the looking at

494

00:23:39,920 --> 00:23:36,690

weeks to up to a month depending on the

495

00:23:41,750 --> 00:23:39,930

season for post-mortem interval and I

496

00:23:43,730 --> 00:23:41,760

suppose you you would then have the

497

00:23:45,950 --> 00:23:43,740

situation where there are very long dead

498

00:23:48,500 --> 00:23:45,960

remains yeah so what we call fully

499

00:23:50,990 --> 00:23:48,510

skeletonized so you're looking at dry

500

00:23:53,330 --> 00:23:51,000

remains no more soft tissue left on the

501
00:23:55,070 --> 00:23:53,340
bones they may be bleached or weathered

502
00:23:57,860 --> 00:23:55,080
because they've been exposed to the

503
00:24:01,250 --> 00:23:57,870
environment and so yeah they're the ones

504
00:24:05,780 --> 00:24:01,260
that I mainly focus on Wow it's just

505
00:24:09,590 --> 00:24:05,790
absolutely fascinating and some might

506
00:24:11,780 --> 00:24:09,600
say it's not a pleasant area but it's a

507
00:24:15,140 --> 00:24:11,790
necessary one I think so but I'm

508
00:24:18,140 --> 00:24:15,150
probably one of the few that I enjoy

509
00:24:20,960 --> 00:24:18,150
that work I find it not pleasant but

510
00:24:22,850 --> 00:24:20,970
rewarding water yeah yeah like I'm doing

511
00:24:25,670 --> 00:24:22,860
something useful well that's that's

512
00:24:27,800 --> 00:24:25,680
absolutely fascinating and we can find

513
00:24:32,930 --> 00:24:27,810

out more about what you do online yes so

514

00:24:34,970 --> 00:24:32,940

I have Twitter accounts and you can just

515

00:24:36,440 --> 00:24:34,980

google my name dr. Haley green Western

516

00:24:39,170 --> 00:24:36,450

Sydney University they have a staff

517

00:24:41,300 --> 00:24:39,180

profile with research interests on that

518

00:24:44,529 --> 00:24:41,310

profile as well fantastic thank you very

519

00:24:48,609 --> 00:24:46,509

and the evening is going on here folks

520

00:24:49,869 --> 00:24:48,619

are more and more people drifting in to

521

00:24:51,609 --> 00:24:49,879

meet all the scientists here and I've

522

00:24:53,919 --> 00:24:51,619

come to another table hello who do we

523

00:24:56,109 --> 00:24:53,929

have here dr. Catherine Doran from

524

00:24:58,959 --> 00:24:56,119

Macquarie University and what's your

525

00:25:00,879 --> 00:24:58,969

area I work mainly in marine systems and

526

00:25:03,519 --> 00:25:00,889

I'm an ecologist ecotoxicology

527

00:25:06,669 --> 00:25:03,529

looking at human impacts in marine

528

00:25:09,549 --> 00:25:06,679

environment well I guess around Sydney

529

00:25:12,489 --> 00:25:09,559

that would be a big area of research are

530

00:25:13,599 --> 00:25:12,499

you focus on the Sydney area or more

531

00:25:15,039 --> 00:25:13,609

widely than that

532

00:25:16,659 --> 00:25:15,049

I've worked a lot in the Sydney region

533

00:25:19,479 --> 00:25:16,669

but also up and down the New South Wales

534

00:25:21,459 --> 00:25:19,489

Coast but certainly wherever there's an

535

00:25:24,519 --> 00:25:21,469

urban settlement you get the Associated

536

00:25:26,019 --> 00:25:24,529

impacts of human activities yeah well up

537

00:25:27,849 --> 00:25:26,029

and down the New South Wales coast do

538

00:25:29,319 --> 00:25:27,859

you mean yeah there's several large

539

00:25:31,269 --> 00:25:29,329

cities that I've worked around the

540

00:25:33,309 --> 00:25:31,279

harbours in so yeah places like

541

00:25:34,629 --> 00:25:33,319

Newcastle and Port Kembla the kinds of

542

00:25:37,149 --> 00:25:34,639

impacts I'm looking at a stormwater

543

00:25:38,589 --> 00:25:37,159

runoff and invasive species the kinds of

544

00:25:40,119 --> 00:25:38,599

things that arrive on boats and you just

545

00:25:40,719 --> 00:25:40,129

don't get as much of that in the smaller

546

00:25:42,579 --> 00:25:40,729

hubs

547

00:25:44,789 --> 00:25:42,589

I know fair enough now I can totally

548

00:25:47,739 --> 00:25:44,799

understand so things do arrive on boats

549

00:25:50,369 --> 00:25:47,749

unwelcome things absolutely we have a

550

00:25:52,269 --> 00:25:50,379

number of hitchhikers coming in on

551
00:25:54,339 --> 00:25:52,279
commercial ships cruise ships

552
00:25:57,279 --> 00:25:54,349
recreational yachts and they're getting

553
00:25:59,019 --> 00:25:57,289
transported all around the world so what

554
00:26:00,699 --> 00:25:59,029
are these hitchhikers are they mainly I

555
00:26:02,469 --> 00:26:00,709
mean the first thing that springs to my

556
00:26:04,329 --> 00:26:02,479
mind would be rats but there must be

557
00:26:06,009 --> 00:26:04,339
more than that it's mainly things that

558
00:26:08,529 --> 00:26:06,019
are living on the outside of the boat so

559
00:26:10,209 --> 00:26:08,539
a lot of different kinds of seaweeds we

560
00:26:13,449 --> 00:26:10,219
have invasive oysters getting shipped

561
00:26:15,430 --> 00:26:13,459
around mussels crabs all the little kind

562
00:26:17,829 --> 00:26:15,440
of invertebrate critters so these things

563
00:26:19,569 --> 00:26:17,839

attach themselves to vessels somewhere

564

00:26:22,149 --> 00:26:19,579

in the world the vessels make their way

565

00:26:25,049 --> 00:26:22,159

to Sydney Harbor Park dock I should say

566

00:26:27,459 --> 00:26:25,059

and these things can be transplanted

567

00:26:28,959 --> 00:26:27,469

exactly so sometimes the conditions

568

00:26:31,930 --> 00:26:28,969

won't be right for them maybe it's too

569

00:26:33,939 --> 00:26:31,940

hot too cold too salty but sometimes it

570

00:26:35,589 --> 00:26:33,949

will be and then they can make the jump

571

00:26:38,859 --> 00:26:35,599

from the ship on to some of our boating

572

00:26:40,659 --> 00:26:38,869

infrastructure I guess in the modern

573

00:26:43,029 --> 00:26:40,669

world that's that's a big problem but in

574

00:26:45,819 --> 00:26:43,039

times past occasionally things would

575

00:26:46,880 --> 00:26:45,829

float into harbors and other countries

576

00:26:51,230 --> 00:26:46,890

on

577

00:26:53,540 --> 00:26:51,240

the past we would have had a lot of

578

00:26:56,090 --> 00:26:53,550

species moving around but just not as

579

00:26:58,550 --> 00:26:56,100

far with the ships we can travel a lot

580

00:27:01,970 --> 00:26:58,560

further across the oceans so so can the

581

00:27:03,770 --> 00:27:01,980

hitchhikers little crustaceans

582

00:27:06,410 --> 00:27:03,780

hitchhiking their way around and what

583

00:27:08,390 --> 00:27:06,420

are the some of the more pressing

584

00:27:10,610 --> 00:27:08,400

problems that these things cause we

585

00:27:12,590 --> 00:27:10,620

haven't actually got many terrible

586

00:27:15,320 --> 00:27:12,600

invaders in Sydney but certainly down in

587

00:27:17,840 --> 00:27:15,330

Melbourne it's quite heavily invaded

588

00:27:20,180 --> 00:27:17,850

Port Phillip Bay and they have some fan

589

00:27:21,740 --> 00:27:20,190

worms really beautiful but they tend to

590

00:27:24,800 --> 00:27:21,750

smother some of the native things that

591

00:27:28,070 --> 00:27:24,810

would grow across the sandy bottoms and

592

00:27:29,480 --> 00:27:28,080

up the pilings and rocky reefs and where

593

00:27:32,090 --> 00:27:29,490

have they've traveled from these worms

594

00:27:34,810 --> 00:27:32,100

most of them tend to come from places in

595

00:27:37,130 --> 00:27:34,820

Asia places with similar kinds of marine

596

00:27:39,200 --> 00:27:37,140

environmental systems to us so it's a

597

00:27:41,000 --> 00:27:39,210

similar kind of temperature now you are

598

00:27:43,040 --> 00:27:41,010

folks there's something to look out for

599

00:27:45,500 --> 00:27:43,050

next time you're in a Harbor in a big

600

00:27:48,670 --> 00:27:45,510

city watch out for those hitchhikers and

601
00:27:51,500 --> 00:27:48,680
can we find what you do online anywhere

602
00:27:52,670 --> 00:27:51,510
certainly on the Macquarie website and I

603
00:27:55,670 --> 00:27:52,680
have a personal website as well

604
00:27:57,080 --> 00:27:55,680
Katherine Darwin calm well all the best

605
00:28:00,040 --> 00:27:57,090
and I hope you don't come across too

606
00:28:02,660 --> 00:28:00,050
many key Tigers thank you very much

607
00:28:06,590 --> 00:28:02,670
there's so many people here now folks

608
00:28:08,480 --> 00:28:06,600
all the tables are engaged and you've

609
00:28:10,490 --> 00:28:08,490
come along and you hope to meet a

610
00:28:12,680 --> 00:28:10,500
scientist you hope to meet a scientist

611
00:28:14,720 --> 00:28:12,690
yes I'm very excited to talk to some of

612
00:28:17,060 --> 00:28:14,730
the neuro scientists or even some of the

613
00:28:18,290 --> 00:28:17,070

marine biologists and yeah everyone

614

00:28:21,710 --> 00:28:18,300

looks like they're having a really good

615

00:28:27,590 --> 00:28:21,720

time so it's a good sign because every

616

00:28:33,050 --> 00:28:27,600

table is now full an astronomer has

617

00:28:34,730 --> 00:28:33,060

presented himself good luck this room is

618

00:28:37,340 --> 00:28:34,740

never-ending with scientists folks I'm

619

00:28:38,810 --> 00:28:37,350

found myself at another table I've been

620

00:28:43,040 --> 00:28:38,820

drawn to this table because there's a

621

00:28:45,590 --> 00:28:43,050

sign saying the hidden world in your gut

622

00:28:47,240 --> 00:28:45,600

and this young lady is going to tell me

623

00:28:50,050 --> 00:28:47,250

about the hidden world in my gut who do

624

00:28:55,070 --> 00:28:50,060

we have here hi my name is Alison and

625

00:28:57,290 --> 00:28:55,080

tell me about my gut alright so when you

626

00:28:59,420 --> 00:28:57,300

first think of micros was the first

627

00:29:02,060 --> 00:28:59,430

thing that comes into your mind Oh

628

00:29:03,800 --> 00:29:02,070

test tubes all microbes oh good question

629

00:29:05,450 --> 00:29:03,810

I I don't know what the first thing that

630

00:29:07,730 --> 00:29:05,460

comes into mind mark what should be

631

00:29:09,350 --> 00:29:07,740

alright so yeah your answer is actually

632

00:29:09,500 --> 00:29:09,360

pretty good because I was expecting you

633

00:29:15,740 --> 00:29:09,510

know

634

00:29:17,390 --> 00:29:15,750

sanitizing everything so then actually

635

00:29:20,630 --> 00:29:17,400

wants to bring Kieffer away from that

636

00:29:22,760 --> 00:29:20,640

because the majority of microbes in this

637

00:29:25,010 --> 00:29:22,770

world are actually not bad for you so

638

00:29:26,510 --> 00:29:25,020

then they don't cause disease and then

639

00:29:28,220 --> 00:29:26,520

so if you think of all the different

640

00:29:31,070 --> 00:29:28,230

microbes they live in the water they

641

00:29:34,460 --> 00:29:31,080

live in the soil they live in the air

642

00:29:36,530 --> 00:29:34,470

even and they even live on you so on

643

00:29:39,170 --> 00:29:36,540

your body and inside your body there are

644

00:29:40,220 --> 00:29:39,180

actually tons of microbes and if you

645

00:29:42,530 --> 00:29:40,230

were to take that and we just have a

646

00:29:46,220 --> 00:29:42,540

look here at your little presentation oh

647

00:29:49,040 --> 00:29:46,230

it says we are part microbes all of us

648

00:29:52,310 --> 00:29:49,050

yes yes oh I have some a few fun facts

649

00:29:55,610 --> 00:29:52,320

okay all right so did you know you were

650

00:29:57,260 --> 00:29:55,620

actually only about 50% human how many

651
00:30:02,300 --> 00:29:57,270
people have told me that many people

652
00:30:04,070 --> 00:30:02,310
said that to me so one of the reasons

653
00:30:06,170 --> 00:30:04,080
actually because you have a lot of

654
00:30:07,760 --> 00:30:06,180
microbes are you particularly inside

655
00:30:09,230 --> 00:30:07,770
your mouth and inside your guts

656
00:30:10,970 --> 00:30:09,240
there are lots and lots of microbes and

657
00:30:12,890 --> 00:30:10,980
then they're actually really good for

658
00:30:15,110 --> 00:30:12,900
you so they do a lot of beneficial

659
00:30:16,790 --> 00:30:15,120
things are you like producing vitamins

660
00:30:18,290 --> 00:30:16,800
they help you digest your food and

661
00:30:20,230 --> 00:30:18,300
without your microbes you will be really

662
00:30:22,790 --> 00:30:20,240
sick and you probably cannot survive

663
00:30:24,049 --> 00:30:22,800

really I mean they are necessary for

664

00:30:27,110 --> 00:30:24,059

life aren't they that's the bottom line

665

00:30:29,210 --> 00:30:27,120

yes definitely and so if you're only

666

00:30:31,430 --> 00:30:29,220

thinking about the self how many

667

00:30:33,680 --> 00:30:31,440

microbial cells - human cells even in

668

00:30:35,990 --> 00:30:33,690

your body that's about half half but if

669

00:30:38,620 --> 00:30:36,000

you think about the DNA so that's the

670

00:30:45,950 --> 00:30:38,630

genetic code of life you are actually

671

00:30:48,919 --> 00:30:45,960

less than 1% human Oh what tell me more

672

00:30:50,990 --> 00:30:48,929

all right so because if it so basically

673

00:30:52,910 --> 00:30:51,000

we took all the DNA within all your

674

00:30:54,740 --> 00:30:52,920

human cells and then you took all the

675

00:30:58,580 --> 00:30:54,750

DNA within your microbial cells you have

676
00:31:01,580 --> 00:30:58,590
a lot small microbial DNA then you have

677
00:31:03,410 --> 00:31:01,590
human DNA so if you think about it maybe

678
00:31:06,350 --> 00:31:03,420
you're actually being controlled by your

679
00:31:08,240 --> 00:31:06,360
microbes and you're just a bag that's

680
00:31:09,919 --> 00:31:08,250
carrying your microbes around especially

681
00:31:12,260 --> 00:31:09,929
at dinner time I think my microbes

682
00:31:14,540 --> 00:31:12,270
control me like tell me it's time to eat

683
00:31:16,850 --> 00:31:14,550
I think wow I had no idea that's

684
00:31:18,110 --> 00:31:16,860
absolutely fascinating and this is one

685
00:31:20,480 --> 00:31:18,120
of the reasons I love coming to these

686
00:31:22,580 --> 00:31:20,490
meet a scientist night you never know

687
00:31:24,950 --> 00:31:22,590
what you're going to find out and what

688
00:31:28,460 --> 00:31:24,960

in your research what's something that

689

00:31:30,740 --> 00:31:28,470

is really surprised you okay so in my

690

00:31:33,410 --> 00:31:30,750

research I look at how the diet affects

691

00:31:35,840 --> 00:31:33,420

our microbes and then how we can use

692

00:31:38,060 --> 00:31:35,850

diets to try and make you know make

693

00:31:40,310 --> 00:31:38,070

ourselves healthier so one of my

694

00:31:43,370 --> 00:31:40,320

favorite parts and actually one of my

695

00:31:45,110 --> 00:31:43,380

questions here was how to turn poo into

696

00:31:48,080 --> 00:31:45,120

abstract art all right so that's

697

00:31:51,080 --> 00:31:48,090

actually better than it sounds so one of

698

00:31:53,660 --> 00:31:51,090

the fun parts of my research is I get to

699

00:31:56,060 --> 00:31:53,670

play with a lot of feces so I gave you

700

00:31:57,830 --> 00:31:56,070

samples from different people and then

701
00:32:00,770 --> 00:31:57,840
what we do is actually we want to look

702
00:32:02,990 --> 00:32:00,780
at the microbes inside and we extract

703
00:32:04,669 --> 00:32:03,000
DNA from it and then afterwards we for

704
00:32:07,160 --> 00:32:04,679
example want to look at how the microbes

705
00:32:12,140 --> 00:32:07,170
change over time you guys can't see this

706
00:32:14,270 --> 00:32:12,150
but then another yes we're looking

707
00:32:17,150 --> 00:32:14,280
another interesting chart here of what

708
00:32:19,460 --> 00:32:17,160
might be in your feces right so then

709
00:32:21,769 --> 00:32:19,470
basically what you can get from your

710
00:32:23,450 --> 00:32:21,779
fecal sample is a chart that is

711
00:32:25,549 --> 00:32:23,460
very colorful and it shows how different

712
00:32:27,139 --> 00:32:25,559
groups of microbes change over time so

713
00:32:28,999 --> 00:32:27,149

your microbes in your gut will be

714

00:32:30,589 --> 00:32:29,009

affected by your lifestyle they'll be

715

00:32:32,709 --> 00:32:30,599

affected by what you eat

716

00:32:35,109 --> 00:32:32,719

whether you do exercise or not or

717

00:32:36,889 --> 00:32:35,119

whether you eat antibiotics so

718

00:32:40,430 --> 00:32:36,899

everything you do in your life can

719

00:32:42,919 --> 00:32:40,440

change your microbes and then some for

720

00:32:44,839 --> 00:32:42,929

example if you eat broccoli one day and

721

00:32:47,570 --> 00:32:44,849

then some microbes really like that then

722

00:32:49,969 --> 00:32:47,580

they will increase in abundance again

723

00:32:52,729 --> 00:32:49,979

it's just one of the things about the

724

00:32:54,440 --> 00:32:52,739

speed meter scientist night.the the

725

00:32:55,579 --> 00:32:54,450

variety of what you learned and who you

726

00:32:57,499 --> 00:32:55,589

meet is just staggering

727

00:33:00,859 --> 00:32:57,509

well I don't know how to wish you luck

728

00:33:02,839 --> 00:33:00,869

with what you do it is very interesting

729

00:33:05,450 --> 00:33:02,849

work and I'm sure very necessary work I

730

00:33:06,589 --> 00:33:05,460

hope you have a great night here tonight

731

00:33:08,659 --> 00:33:06,599

and I hope lots of people come up to

732

00:33:12,619 --> 00:33:08,669

find out about their gut hey thank you

733

00:33:14,359 --> 00:33:12,629

very much hello excuse me could I have a

734

00:33:16,339 --> 00:33:14,369

quick chat to you I've noticed you're

735

00:33:17,810 --> 00:33:16,349

just having a speed meet with a

736

00:33:19,219 --> 00:33:17,820

scientist how did that go

737

00:33:21,320 --> 00:33:19,229

I said speed meets through four

738

00:33:23,629 --> 00:33:21,330

different scientists for you have been

739

00:33:25,759 --> 00:33:23,639

busy I've been very busy it's been a

740

00:33:27,829 --> 00:33:25,769

great interesting night I just wanted to

741

00:33:30,109 --> 00:33:27,839

branch out into other scientific fields

742

00:33:31,700 --> 00:33:30,119

I mean sure I talked to a couple of

743

00:33:33,649 --> 00:33:31,710

neuroscientists because that's the Aero

744

00:33:35,959 --> 00:33:33,659

science I actually work in but out

745

00:33:38,869 --> 00:33:35,969

talking to a biologist about DNA

746

00:33:41,749 --> 00:33:38,879

barcoding and termite breeding program

747

00:33:44,989 --> 00:33:41,759

that's been quite interesting as well as

748

00:33:47,299 --> 00:33:44,999

speaking to a marine biologist in

749

00:33:50,509 --> 00:33:47,309

relation to our cruise ships coming in

750

00:33:53,539 --> 00:33:50,519

to sydney harbour and the algae and ship

751

00:33:56,089 --> 00:33:53,549

worms all that that come in and yeah

752

00:33:58,209 --> 00:33:56,099

affect our Sydney Harbor to some degree

753

00:34:02,989 --> 00:33:58,219

and she's now working on a project that

754

00:34:05,539 --> 00:34:02,999

is keeping Sydney Harbor clean and by

755

00:34:07,549 --> 00:34:05,549

having rock oysters in there and then

756

00:34:09,980 --> 00:34:07,559

also finding a home for them once

757

00:34:11,839 --> 00:34:09,990

they've done their job this night is not

758

00:34:14,240 --> 00:34:11,849

just for the public which is great that

759

00:34:16,970 --> 00:34:14,250

the public hear but for other scientists

760

00:34:19,129 --> 00:34:16,980

such as yourself to come along and speed

761

00:34:21,619 --> 00:34:19,139

meet other scientists that's a wonderful

762

00:34:24,319 --> 00:34:21,629

opportunity yes yes definitely so and

763

00:34:26,720 --> 00:34:24,329

I'm also doing a bit of computer science

764

00:34:29,089 --> 00:34:26,730

at the moment - learning to code program

765

00:34:30,829 --> 00:34:29,099

computers so why don't I mean if you've

766

00:34:32,119 --> 00:34:30,839

got their scientific mind it's it's

767

00:34:34,530 --> 00:34:32,129

great to chat to have a scientist

768

00:34:36,390 --> 00:34:34,540

because it just you just know what

769

00:34:38,100 --> 00:34:36,400

out there really because if you're

770

00:34:39,570 --> 00:34:38,110

focused on your specialty you don't know

771

00:34:41,520 --> 00:34:39,580

what other specialties are up to because

772

00:34:43,710 --> 00:34:41,530

science is so complex you've got so many

773

00:34:47,070 --> 00:34:43,720

different areas of science biology

774

00:34:49,350 --> 00:34:47,080

chemistry physics neuroscience Anatomy

775

00:34:53,610 --> 00:34:49,360

astronomy astrology the list goes on

776

00:34:55,020 --> 00:34:53,620

right certainly doesn't and again I'm so

777

00:34:56,790 --> 00:34:55,030

pleased you've come along here tonight

778

00:34:58,080 --> 00:34:56,800

to take advantage of this opportunity

779

00:35:00,210 --> 00:34:58,090

yeah I'm just grateful that the

780

00:35:03,510 --> 00:35:00,220

powerhouse museum or I should say now at

781

00:35:06,870 --> 00:35:03,520

the Museum of Arts and Sciences has

782

00:35:08,460 --> 00:35:06,880

enabled this to happen just to something

783

00:35:12,480 --> 00:35:08,470

new that gets you out of the everyday

784

00:35:14,790 --> 00:35:12,490

routine and it's yes it's quite reviving

785

00:35:16,290 --> 00:35:14,800

actually I absolutely agree and I

786

00:35:18,480 --> 00:35:16,300

suppose now you're off to meet a few

787

00:35:21,480 --> 00:35:18,490

more yeah a few more and I was just keep

788

00:35:23,790 --> 00:35:21,490

browsing this science festival first I

789

00:35:29,670 --> 00:35:23,800

mean science at the moment thank you

790

00:35:32,160 --> 00:35:29,680

very much good night thanks that was

791

00:35:34,980 --> 00:35:32,170

part two of speed and meet the

792

00:35:38,180 --> 00:35:34,990

scientists join us next week for the

793

00:35:53,600 --> 00:35:38,190

final part part three

794

00:36:00,400 --> 00:35:58,180

[Music]

795

00:36:01,779 --> 00:36:00,410

hi I'm sue Blackmore I am a visiting

796

00:36:04,000 --> 00:36:01,789

professor in psychology at the

797

00:36:05,740 --> 00:36:04,010

University of Plymouth in England and

798

00:36:09,250 --> 00:36:05,750

I'm really looking forward to coming to

799

00:36:11,740 --> 00:36:09,260

skeptic on 2018 in October I'll be

800

00:36:13,150 --> 00:36:11,750

talking about my new book seeing myself

801
00:36:15,880 --> 00:36:13,160
the new science of out-of-body

802
00:36:17,740 --> 00:36:15,890
experiences this is really what the

803
00:36:19,750 --> 00:36:17,750
reason that I ever got drawn into

804
00:36:21,880 --> 00:36:19,760
skepticism in the first place because I

805
00:36:23,410 --> 00:36:21,890
had this incredible experience that I

806
00:36:24,819 --> 00:36:23,420
couldn't understand it so I was

807
00:36:28,299 --> 00:36:24,829
determined to become a parapsychologist

808
00:36:30,670 --> 00:36:28,309
and I did my PhD in parapsychology did

809
00:36:34,299 --> 00:36:30,680
loads of experiments on espn2 left me

810
00:36:37,170 --> 00:36:34,309
all these kinds of things and well then

811
00:36:39,180 --> 00:36:37,180
the evidence made me change my mind

812
00:36:41,010 --> 00:36:39,190
joints psych up and got involved in all

813
00:36:44,520 --> 00:36:41,020

the skeptical routes of those days but

814

00:36:46,020 --> 00:36:44,530

for a couple of decades so things were

815

00:36:47,700 --> 00:36:46,030

very different in those days and I'm

816

00:36:49,620 --> 00:36:47,710

looking forward very much indeed to

817

00:36:51,180 --> 00:36:49,630

finding out a bit more about modern

818

00:36:54,390 --> 00:36:51,190

skepticism on the other side of the

819

00:36:56,790 --> 00:36:54,400

world and I hope that you will enjoy

820

00:36:57,780 --> 00:36:56,800

hearing the new science of out-of-body

821

00:37:00,540 --> 00:36:57,790

experiences

822

00:37:02,550 --> 00:37:00,550

it's the neurosciences factors and we

823

00:37:05,160 --> 00:37:02,560

can now understand just why and how it

824

00:37:06,360 --> 00:37:05,170

is that so many people are convinced

825

00:37:09,900 --> 00:37:06,370

that they've gone out - out of their

826

00:37:11,460 --> 00:37:09,910

body when they're really still inside in

827

00:37:13,110 --> 00:37:11,470

a minute they're not really inside are

828

00:37:15,480 --> 00:37:13,120

they I mean there's not the soul or a

829

00:37:18,150 --> 00:37:15,490

spirit or even really conscious self in

830

00:37:19,620 --> 00:37:18,160

that room well that's some of the very

831

00:37:21,900 --> 00:37:19,630

interesting things I hope we'll all be

832

00:37:23,060 --> 00:37:21,910

discussing in October I hope to see you

833

00:37:24,800 --> 00:37:23,070

back

834

00:37:27,600 --> 00:37:24,810

[Music]

835

00:37:29,430 --> 00:37:27,610

meet Professor Susan Blackmore at this

836

00:37:31,920 --> 00:37:29,440

year's skeptic on the Australian

837

00:37:34,110 --> 00:37:31,930

skeptics and National Convention October

838

00:37:38,040 --> 00:37:34,120

the 13th and the 14th the concourse

839

00:37:41,100 --> 00:37:38,050

Chatswood tickets at convention skeptics

840

00:37:52,430 --> 00:37:41,110

dot-com today you

841

00:37:58,140 --> 00:37:55,230

skeptics award for critical thinking in

842

00:38:00,030 --> 00:37:58,150

journalism nominations open and this

843

00:38:03,270 --> 00:38:00,040

comes to us from the Australian skeptics

844

00:38:05,520 --> 00:38:03,280

website skeptics comdata you written by

845

00:38:07,590 --> 00:38:05,530

Tim Mendham published on May 20th of

846

00:38:10,019 --> 00:38:07,600

August 2018

847

00:38:13,089 --> 00:38:10,029

[Music]

848

00:38:16,359 --> 00:38:13,099

Australian skeptics Inc is adding to its

849

00:38:19,289 --> 00:38:16,369

portfolio of annual awards with one for

850

00:38:22,329 --> 00:38:19,299

the best piece of skeptical journalism

851
00:38:24,579 --> 00:38:22,339
the award is named after the late Barry

852
00:38:27,519 --> 00:38:24,589
Williams past president and executive

853
00:38:30,370 --> 00:38:27,529
officer of Australian skeptics Inc who

854
00:38:33,039 --> 00:38:30,380
was a regular on Australian media the

855
00:38:35,589 --> 00:38:33,049
Barry Williams award for skeptical

856
00:38:39,099 --> 00:38:35,599
journalism will recognise the best piece

857
00:38:41,109 --> 00:38:39,109
of journalism in any medium that takes a

858
00:38:43,690 --> 00:38:41,119
critical and skeptical approach to a

859
00:38:46,089 --> 00:38:43,700
topic that falls within our remit which

860
00:38:48,719 --> 00:38:46,099
is the scientific investigation of

861
00:38:53,079 --> 00:38:48,729
pseudoscience and the paranormal the

862
00:38:56,109 --> 00:38:53,089
award is nicknamed the wallaby in memory

863
00:38:58,269 --> 00:38:56,119

of Sir Jim our wallaby the regular ngon

864

00:39:01,299 --> 00:38:58,279

de plume Barrie used from his more

865

00:39:04,349 --> 00:39:01,309

whimsical editorial pieces it will be

866

00:39:07,739 --> 00:39:04,359

awarded annually with the citation and

867

00:39:10,120 --> 00:39:07,749

\$2,000 prize a panel made up out of

868

00:39:12,460 --> 00:39:10,130

experienced journalists across differing

869

00:39:15,069 --> 00:39:12,470

media has been put together to review

870

00:39:16,749 --> 00:39:15,079

entries Tim Mendham executive officer of

871

00:39:19,239 --> 00:39:16,759

Australian skeptics Inc and editor of

872

00:39:21,009 --> 00:39:19,249

the skeptics said quote we have given a

873

00:39:23,469 --> 00:39:21,019

similar award a few times in the past

874

00:39:26,589 --> 00:39:23,479

though the most recent was way back in

875

00:39:29,620 --> 00:39:26,599

2010 we're now calling for nominations

876

00:39:31,779 --> 00:39:29,630

for the wallaby from skeptics the public

877

00:39:33,789 --> 00:39:31,789

and the media journalists can nominate

878

00:39:37,180 --> 00:39:33,799

their own work it would normally be

879

00:39:40,299 --> 00:39:37,190

given for one piece or a series used in

880

00:39:42,329 --> 00:39:40,309

print TV radio or online produced in

881

00:39:46,209 --> 00:39:42,339

Australia and published or broadcast

882

00:39:48,569 --> 00:39:46,219

during 2018 in quote nominations should

883

00:39:52,630 --> 00:39:48,579

be sent to the editor of the skeptic at

884

00:39:54,849 --> 00:39:52,640

editor at skeptics comm today you or

885

00:39:57,789 --> 00:39:54,859

send hard copies to the Australian

886

00:40:01,599 --> 00:39:57,799

skeptics p.m. box 20 Beecroft New South

887

00:40:03,219 --> 00:40:01,609

Wales to one-one-nine and I will link to

888

00:40:06,309 --> 00:40:03,229

this page in the show notes if you want

889

00:40:10,089 --> 00:40:06,319

to have a closer look at those addresses

890

00:40:12,609 --> 00:40:10,099

Tim said that the key issue would be the

891

00:40:15,519 --> 00:40:12,619

nature of a quote skeptical in quote

892

00:40:18,430 --> 00:40:15,529

piece of journalism quote should it take

893

00:40:20,979 --> 00:40:18,440

a debunking stance or a more general

894

00:40:22,660 --> 00:40:20,989

critical thinking approach personally I

895

00:40:24,820 --> 00:40:22,670

would prefer the second the B

896

00:40:27,610 --> 00:40:24,830

take the critical investigation approach

897

00:40:29,800 --> 00:40:27,620

to the topic though I must admit my have

898

00:40:34,150 --> 00:40:29,810

concerns if a piece came down in favor

899

00:40:35,680 --> 00:40:34,160

of the outer fringes of Wu my view is

900

00:40:38,530 --> 00:40:35,690

that we should certainly not be

901
00:40:41,740 --> 00:40:38,540
rewarding a puff piece for either side

902
00:40:44,140 --> 00:40:41,750
of the argument serious journalism only

903
00:40:46,060 --> 00:40:44,150
need apply in quote the Wallaby will

904
00:40:48,820 --> 00:40:46,070
compliment the skeptics other Awards

905
00:40:51,430 --> 00:40:48,830
which include the bent spoon award which

906
00:40:53,740 --> 00:40:51,440
goes to the most preposterous piece of

907
00:40:56,380 --> 00:40:53,750
paranormal pseudo-scientific piffle as

908
00:40:58,780 --> 00:40:56,390
well as the more positive skeptic of the

909
00:41:00,760 --> 00:40:58,790
Year award and the Thor net award for

910
00:41:02,590 --> 00:41:00,770
the promotion of reason the latter goes

911
00:41:04,540 --> 00:41:02,600
to a member of the public who may not

912
00:41:07,000 --> 00:41:04,550
have anything to do with the skeptical

913
00:41:10,210 --> 00:41:07,010

movement the prize amount for the Thor

914

00:41:12,580 --> 00:41:10,220

net award previously set at \$1000 will

915

00:41:14,950 --> 00:41:12,590

be raised to \$2,000 in line with the

916

00:41:16,990 --> 00:41:14,960

media prize the recipients of these

917

00:41:18,760 --> 00:41:17,000

awards are traditionally announced at

918

00:41:21,160 --> 00:41:18,770

the gala dinner and our annual

919

00:41:25,480 --> 00:41:21,170

convention which this year will be held

920

00:41:27,730 --> 00:41:25,490

on October the 13th so there you are

921

00:41:29,620 --> 00:41:27,740

there's the clue in the hint any

922

00:41:32,560 --> 00:41:29,630

journalists out there if you know any

923

00:41:36,490 --> 00:41:32,570

journalists there is a prize in the

924

00:41:39,490 --> 00:41:36,500

offing \$2,000 details and skeptics calm

925

00:41:45,570 --> 00:41:39,500

delay you or just click the links in

926
00:41:53,860 --> 00:41:51,150

[Music]

927
00:41:55,780 --> 00:41:53,870

hi I'm Darrin McKee one of the hosts of

928
00:41:57,520 --> 00:41:55,790

the reality check each week my co-host

929
00:41:59,110 --> 00:41:57,530

and I explore a range of controversies

930
00:42:00,610 --> 00:41:59,120

and curiosities using science and

931
00:42:02,500 --> 00:42:00,620

critical thinking you can find us on

932
00:42:04,090 --> 00:42:02,510

iTunes your favorite podcasting platform

933
00:42:05,680 --> 00:42:04,100

and on Facebook by searching for the

934
00:42:08,170 --> 00:42:05,690

reality check or by following us on

935
00:42:09,850 --> 00:42:08,180

Twitter at TRC underscore podcast until

936
00:42:18,160 --> 00:42:09,860

then keep an open mind but not so open

937
00:42:22,850 --> 00:42:18,170

your brain falls out his may not spooky

938
00:42:27,200 --> 00:42:22,860

action at the distance

939

00:42:28,970 --> 00:42:27,210

I know you know me people I like to seek

940

00:42:30,950 --> 00:42:28,980

out those reptiles and of course

941

00:42:32,600 --> 00:42:30,960

reptiles around this time you really

942

00:42:35,510 --> 00:42:32,610

like their handlers who we got here

943

00:42:36,920 --> 00:42:35,520

again Anthony and this is Johanna great

944

00:42:39,620 --> 00:42:36,930

to talk to Joanne is that Johanna the

945

00:42:41,930 --> 00:42:39,630

goanna it might be which is a great name

946

00:42:43,850 --> 00:42:41,940

and good at original names now and of

947

00:42:45,050 --> 00:42:43,860

course as I was mentioning around this

948

00:42:46,880 --> 00:42:45,060

time of year you're a very popular

949

00:42:49,520 --> 00:42:46,890

handler because you're the warmest thing

950

00:42:51,620 --> 00:42:49,530

around are you that's precisely why it

951
00:42:53,660 --> 00:42:51,630
loves me so would you be hotter than a

952
00:42:55,940 --> 00:42:53,670
rock that she'd like to normally sit on

953
00:42:58,310 --> 00:42:55,950
this human body temperature nice for

954
00:43:00,530 --> 00:42:58,320
them at bat right and also I remember

955
00:43:02,720 --> 00:43:00,540
you told me once about how to tell when

956
00:43:04,550 --> 00:43:02,730
a reptile is nervous or not happy so

957
00:43:06,200 --> 00:43:04,560
she's just sort of sitting there making

958
00:43:07,790 --> 00:43:06,210
little flailing movements with the front

959
00:43:09,350 --> 00:43:07,800
legs is that a comfy thing or not yeah

960
00:43:11,660 --> 00:43:09,360
it's just yet trying to grant get hold

961
00:43:13,430 --> 00:43:11,670
just once if wants to feel secure so

962
00:43:16,040 --> 00:43:13,440
it's getting its claws into its best

963
00:43:17,510 --> 00:43:16,050

comfortable spot yeah now round about

964

00:43:21,020 --> 00:43:17,520

this time of year in Australia would

965

00:43:22,790 --> 00:43:21,030

would they be about to have a few eggs

966

00:43:24,740 --> 00:43:22,800

or carrying any egg to the module when's

967

00:43:27,140 --> 00:43:24,750

their breeding a tennis when's it happen

968

00:43:28,730 --> 00:43:27,150

here very soon the boys are when the

969

00:43:31,010 --> 00:43:28,740

weather warms up a little bit more the

970

00:43:33,310 --> 00:43:31,020

boys will be out looking for girls and

971

00:43:35,200 --> 00:43:33,320

the girls will be looking for food

972

00:43:37,210 --> 00:43:35,210

and if they get enough food then they'll

973

00:43:38,890 --> 00:43:37,220

love you like all right and our boys

974

00:43:41,020 --> 00:43:38,900

will be really looking for them but

975

00:43:43,330 --> 00:43:41,030

we're pretty sure that there'd be a like

976

00:43:46,780 --> 00:43:43,340

a fertility pheromone going on

977

00:43:48,940 --> 00:43:46,790

yes and how done do the females choose

978

00:43:50,620 --> 00:43:48,950

the males or all the males just sort of

979

00:43:51,130 --> 00:43:50,630

very forceful has it work in the goanna

980

00:43:54,100 --> 00:43:51,140

world

981

00:43:56,110 --> 00:43:54,110

well the male's will choose any female

982

00:43:58,210 --> 00:43:56,120

that it feels like the same isn't really

983

00:43:58,960 --> 00:43:58,220

a if but because the males are much

984

00:44:01,180 --> 00:43:58,970

bigger

985

00:44:04,060 --> 00:44:01,190

I'll assume and the male's will fight

986

00:44:07,120 --> 00:44:04,070

for their opportunity the biggest sand

987

00:44:09,070 --> 00:44:07,130

toughest miles might get the chance to

988

00:44:10,690 --> 00:44:09,080

make it looks like Joanna's giving you a

989

00:44:12,310 --> 00:44:10,700

bit of a kiss in the year there what's

990

00:44:14,680 --> 00:44:12,320

going on with the tongue it's just it's

991

00:44:16,630 --> 00:44:14,690

just smelling the air just constantly

992

00:44:18,520 --> 00:44:16,640

sniffing with their tongue so just

993

00:44:20,860 --> 00:44:18,530

smelling that's all it's doing just

994

00:44:23,230 --> 00:44:20,870

checking foot whatever it can identify I

995

00:44:24,760 --> 00:44:23,240

smell and what's the one question kids

996

00:44:26,830 --> 00:44:24,770

always ask you what's the one thing they

997

00:44:28,060 --> 00:44:26,840

want to know oh that's a good question

998

00:44:29,710 --> 00:44:28,070

because they've always coming up they're

999

00:44:31,720 --> 00:44:29,720

really interested but there must be one

1000

00:44:33,640 --> 00:44:31,730

thing that they my name is misconception

1001
00:44:35,200 --> 00:44:33,650
they've got from some fart I just work

1002
00:44:37,210 --> 00:44:35,210
out the question and it's a really

1003
00:44:40,880 --> 00:44:37,220
depressing question for me as a as a

1004
00:44:43,910 --> 00:44:40,890
scientist they ask me is it real

1005
00:44:47,270 --> 00:44:43,920
I know and I'm baffled by that question

1006
00:44:49,400 --> 00:44:47,280
because of course it's real there's a

1007
00:44:51,020 --> 00:44:49,410
few just basic questions I'll ask and

1008
00:44:53,210 --> 00:44:51,030
actually Johanna is a female obviously

1009
00:44:54,350 --> 00:44:53,220
what would a male sit there as calmly as

1010
00:44:56,540 --> 00:44:54,360
that although they're a bit more wacky

1011
00:44:58,520 --> 00:44:56,550
yeah yeah but again it's just a

1012
00:45:00,680 --> 00:44:58,530
conditioning process these are these are

1013
00:45:02,600 --> 00:45:00,690

like I call them flagship animals and it

1014

00:45:06,110 --> 00:45:02,610

takes a lot of conditioning to get them

1015

00:45:08,210 --> 00:45:06,120

used to people noise etc so they can

1016

00:45:10,010 --> 00:45:08,220

then be used as mascots for their for

1017

00:45:12,320 --> 00:45:10,020

their species or their habitats or

1018

00:45:15,140 --> 00:45:12,330

whatever messages we might have for an

1019

00:45:16,490 --> 00:45:15,150

audience yeah have a great time here at

1020

00:45:17,990 --> 00:45:16,500

the Museum tonight and thank you for

1021

00:45:21,730 --> 00:45:18,000

sharing your reptiles I'll see you

1022

00:45:28,070 --> 00:45:24,500

just a fashion tip for you scientists

1023

00:45:31,940 --> 00:45:28,080

out there from where I'm standing I can

1024

00:45:35,270 --> 00:45:31,950

see four women wearing MC Hammer pants

1025

00:45:36,950 --> 00:45:35,280

so MC Hammer pants are probably big in

1026

00:45:39,380 --> 00:45:36,960

the scientific field I don't know why

1027

00:45:41,540 --> 00:45:39,390

it's comfy it's winter it's if it's

1028

00:45:44,240 --> 00:45:41,550

happening it's now

1029

00:45:46,160 --> 00:45:44,250

that's the hot tip for scientists so if

1030

00:45:47,630 --> 00:45:46,170

you're a guy get into the MC Hammer

1031

00:45:50,569 --> 00:45:47,640

pants because the guys haven't picked up

1032

00:45:51,620 --> 00:45:50,579

on it yet people oh look I've just been

1033

00:45:54,829 --> 00:45:51,630

talking to some people and who've we got

1034

00:45:56,089 --> 00:45:54,839

here I'm Jesse and Mel and what does the

1035

00:45:57,470 --> 00:45:56,099

show you're doing for science wait I'm

1036

00:45:58,970 --> 00:45:57,480

sorry we're street science we've come

1037

00:46:00,470 --> 00:45:58,980

down from Brisbane and essentially we're

1038

00:46:02,450 --> 00:46:00,480

gonna be blowing stuff up on stage

1039

00:46:04,190 --> 00:46:02,460

getting the kids excited and yeah having

1040

00:46:06,650 --> 00:46:04,200

a whole bunch of fun okay hydrogen

1041

00:46:09,530 --> 00:46:06,660

peroxide 90% like Warner von braun

1042

00:46:11,420 --> 00:46:09,540

rocket fueled bang match we don't waste

1043

00:46:16,670 --> 00:46:11,430

our time trying to set hydrogen peroxide

1044

00:46:18,770 --> 00:46:16,680

on fire straight away no mucking about

1045

00:46:20,150 --> 00:46:18,780

and what seemed to excite the kids most

1046

00:46:22,339 --> 00:46:20,160

are they you know they kind of like all

1047

00:46:25,040 --> 00:46:22,349

scared or they like yeah bang bang I

1048

00:46:27,349 --> 00:46:25,050

reckon the liquid nitrogen they're not

1049

00:46:30,049 --> 00:46:27,359

scared of but very they should be fire

1050

00:46:32,540 --> 00:46:30,059

they could be but not with us we're

1051
00:46:36,710 --> 00:46:32,550
professionals so what's your favorite

1052
00:46:39,680 --> 00:46:36,720
thing you freeze poor rubber duckies

1053
00:46:40,849 --> 00:46:39,690
don't really stand much of a chance so

1054
00:46:42,500 --> 00:46:40,859
then you hit it with a hammer

1055
00:46:44,210 --> 00:46:42,510
no you just drop it on the floor that's

1056
00:46:45,890 --> 00:46:44,220
it as simple as that Wow

1057
00:46:48,020 --> 00:46:45,900
that is great I don't think the duckies

1058
00:46:50,720 --> 00:46:48,030
enjoyed it as much as we do though and

1059
00:46:53,240 --> 00:46:50,730
what have you got your degrees in I have

1060
00:46:54,859 --> 00:46:53,250
an undergraduate degree in secondary

1061
00:46:57,500 --> 00:46:54,869
education and I'm currently doing a PhD

1062
00:46:59,780 --> 00:46:57,510
in education and what's your background

1063
00:47:01,849 --> 00:46:59,790

I'm originally research scientist a

1064

00:47:03,380 --> 00:47:01,859

botanist and geneticist and I did my

1065

00:47:05,059 --> 00:47:03,390

graduate diploma in education as well

1066

00:47:07,700 --> 00:47:05,069

that's the third botanist the third

1067

00:47:10,430 --> 00:47:07,710

botanist I have met tonight okay what's

1068

00:47:12,740 --> 00:47:10,440

your favorite plant and why duranta

1069

00:47:15,200 --> 00:47:12,750

repentance its common name geisha girl

1070

00:47:17,180 --> 00:47:15,210

it's a very common ornamental around

1071

00:47:19,520 --> 00:47:17,190

Queensland and it's actually in my mum's

1072

00:47:20,930 --> 00:47:19,530

backyard is it a native no it's not

1073

00:47:22,490 --> 00:47:20,940

actually it's one of those fifties

1074

00:47:24,319 --> 00:47:22,500

plants that our parents like yeah

1075

00:47:26,240 --> 00:47:24,329

they're planted everywhere the colors

1076
00:47:28,549 --> 00:47:26,250
are so pretty it's got beautiful little

1077
00:47:30,230 --> 00:47:28,559
purple leaves geisha girl based off the

1078
00:47:32,539 --> 00:47:30,240
Japanese geisha are very pretty very

1079
00:47:34,370 --> 00:47:32,549
ornate well I like the cotton Easter

1080
00:47:35,839 --> 00:47:34,380
which of course is all around my place

1081
00:47:37,280 --> 00:47:35,849
in Newcastle my mum put them there to

1082
00:47:39,470 --> 00:47:37,290
50s thing as well they're like little

1083
00:47:41,089 --> 00:47:39,480
cherry things totally not native at all

1084
00:47:43,520 --> 00:47:41,099
they look stupid in Australia but they

1085
00:47:45,650 --> 00:47:43,530
go with 50s bricks we're making good use

1086
00:47:47,520 --> 00:47:45,660
of the tip awara or the Rosewood which

1087
00:47:49,170 --> 00:47:47,530
has those beautiful helicopters

1088
00:47:50,370 --> 00:47:49,180

so if you've ever cut those seeds throw

1089

00:47:51,750 --> 00:47:50,380

them up into the air they fly on their

1090

00:47:53,280 --> 00:47:51,760

way down we're using them for a new

1091

00:47:55,020 --> 00:47:53,290

National Science Week show and Brizzy as

1092

00:47:56,190 --> 00:47:55,030

well now of course everybody has

1093

00:47:57,900 --> 00:47:56,200

something that they want to do in their

1094

00:48:00,090 --> 00:47:57,910

show they haven't quite got the budget

1095

00:48:01,380 --> 00:48:00,100

for it to be too dangerous what's the

1096

00:48:03,030 --> 00:48:01,390

next thing you'd like to put into your

1097

00:48:04,860 --> 00:48:03,040

show that like I don't you give too much

1098

00:48:06,570 --> 00:48:04,870

away but yeah because there's stuff that

1099

00:48:07,680 --> 00:48:06,580

you want to do but you can't always do

1100

00:48:09,990 --> 00:48:07,690

it in front of kids for insurance

1101
00:48:11,400 --> 00:48:10,000
reasons you know I mean obviously I'd

1102
00:48:13,200 --> 00:48:11,410
like to fire a gun I mean who wouldn't

1103
00:48:14,700 --> 00:48:13,210
but you know teach them how bazooka

1104
00:48:16,500 --> 00:48:14,710
works but indoors that doesn't go so

1105
00:48:18,000 --> 00:48:16,510
well your favorite experiment is the

1106
00:48:19,200 --> 00:48:18,010
elephant's - my favorite experiment is

1107
00:48:21,300 --> 00:48:19,210
the elephant's toothpaste

1108
00:48:23,310 --> 00:48:21,310
I have extra-large elephant's toothpaste

1109
00:48:25,140 --> 00:48:23,320
would be very very awesome like a couple

1110
00:48:27,570 --> 00:48:25,150
of meters ha that could be awesome yeah

1111
00:48:28,950 --> 00:48:27,580
hang on is that that Indian toothpaste

1112
00:48:33,540 --> 00:48:28,960
it has no fluoride in it what do you

1113
00:48:36,090 --> 00:48:33,550

mean reaction that catalyzes and sort of

1114

00:48:38,640 --> 00:48:36,100

explodes out of a beautiful flask way up

1115

00:48:42,210 --> 00:48:38,650

into the air at the moment it's not on

1116

00:48:44,190 --> 00:48:42,220

the spittoon much well it is but on a

1117

00:48:46,410 --> 00:48:44,200

smaller scale I would like to make it

1118

00:48:48,420 --> 00:48:46,420

extra extra large we've got them jumping

1119

00:48:50,160 --> 00:48:48,430

maybe up to 80 centimeters out of a

1120

00:48:52,460 --> 00:48:50,170

flask but if you could up size it you

1121

00:48:55,440 --> 00:48:52,470

could get it what a meter and a half -

1122

00:48:56,580 --> 00:48:55,450

where can people find you guys online to

1123

00:48:58,860 --> 00:48:56,590

find out where you're doing shows in

1124

00:49:01,380 --> 00:48:58,870

Sydney and Brisbane in the future where

1125

00:49:02,880 --> 00:49:01,390

Street science comm dot-eu but of course

1126
00:49:04,320 --> 00:49:02,890
Facebook is where everything's at so

1127
00:49:05,970 --> 00:49:04,330
look for street science on Facebook

1128
00:49:07,680 --> 00:49:05,980
we're very proud to be down from

1129
00:49:09,780 --> 00:49:07,690
Brisbane for City Science Festival it's

1130
00:49:12,000 --> 00:49:09,790
going to be an absolute blast destroys

1131
00:49:18,150 --> 00:49:12,010
the pun happy science week boom boom

1132
00:49:20,970 --> 00:49:18,160
thank you my name is doctor I'm a doctor

1133
00:49:23,250 --> 00:49:20,980
of medicine I'm a pharmacologist I'm

1134
00:49:24,780 --> 00:49:23,260
doing PhD from University of Technology

1135
00:49:26,700 --> 00:49:24,790
Sydney with two scholarships from

1136
00:49:28,360 --> 00:49:26,710
Australian government and I would like

1137
00:49:31,750 --> 00:49:28,370
to say something

1138
00:49:34,660 --> 00:49:31,760

about like how innovation and new things

1139

00:49:36,460 --> 00:49:34,670

they can change the world and how new

1140

00:49:39,280 --> 00:49:36,470

people should come into this thing

1141

00:49:41,290 --> 00:49:39,290

toward science because science is the

1142

00:49:43,840 --> 00:49:41,300

thing that can lead this world towards

1143

00:49:46,840 --> 00:49:43,850

the next step and this world can live

1144

00:49:49,540 --> 00:49:46,850

more life because otherwise there is a

1145

00:49:52,480 --> 00:49:49,550

destruction but if we will focus on

1146

00:49:55,240 --> 00:49:52,490

science and we will do work on daily

1147

00:49:57,790 --> 00:49:55,250

basis we will do critical thinking there

1148

00:50:00,220 --> 00:49:57,800

would be this life for this world will

1149

00:50:02,860 --> 00:50:00,230

increase so we should focus on knowledge

1150

00:50:05,410 --> 00:50:02,870

not on the repetition or a bigger thing

1151
00:50:08,980 --> 00:50:05,420
or a more money-making they focus on

1152
00:50:10,780 --> 00:50:08,990
real science and real knowledge we

1153
00:50:12,220 --> 00:50:10,790
discovered one of the hidden fans

1154
00:50:14,410 --> 00:50:12,230
weren't one of the people who is

1155
00:50:15,790 --> 00:50:14,420
actually at the Madame frou frou cafe

1156
00:50:18,160 --> 00:50:15,800
when Richard and I there or sometimes

1157
00:50:19,450 --> 00:50:18,170
Tim and I there have you seen Jim and I

1158
00:50:22,450 --> 00:50:19,460
chatting in the corner of the Madame

1159
00:50:23,620 --> 00:50:22,460
frou frou have you I have so you can

1160
00:50:24,940 --> 00:50:23,630
tell people the whole bunga bunga

1161
00:50:28,120 --> 00:50:24,950
recording and the whole thing it mean

1162
00:50:30,190 --> 00:50:28,130
it's real delicious coffee poached eggs

1163
00:50:32,830 --> 00:50:30,200

smashed over the hallway in a West

1164

00:50:34,150 --> 00:50:32,840

experience you know it's great and what

1165

00:50:35,800 --> 00:50:34,160

do you think is different about Science

1166

00:50:38,140 --> 00:50:35,810

Week this year what's the exciting thing

1167

00:50:40,540 --> 00:50:38,150

this year there seems to be a buzz I

1168

00:50:42,370 --> 00:50:40,550

think a lot of media recently has

1169

00:50:46,120 --> 00:50:42,380

focused on things like the drought in

1170

00:50:48,430 --> 00:50:46,130

Australia the plastic bag ban people are

1171

00:50:51,040 --> 00:50:48,440

coming a lot more aware of the problems

1172

00:50:53,830 --> 00:50:51,050

facing us and that seems to be

1173

00:50:56,590 --> 00:50:53,840

reflecting here what yours bill

1174

00:50:59,890 --> 00:50:56,600

specialty in science my specialty is

1175

00:51:01,990 --> 00:50:59,900

micro biomes so my background is marine

1176

00:51:05,230 --> 00:51:02,000

micro biomes and then soil but now I do

1177

00:51:07,030 --> 00:51:05,240

a lot of human microbiome so yeah and as

1178

00:51:08,530 --> 00:51:07,040

a bit bacteriologist what's your

1179

00:51:10,530 --> 00:51:08,540

favorite bacteria you must have a

1180

00:51:13,720 --> 00:51:10,540

favorite one my favorite bacteria is

1181

00:51:15,940 --> 00:51:13,730

Helicobacter pylori the gut bug

1182

00:51:17,530 --> 00:51:15,950

yes the stomach ulcer the one that

1183

00:51:19,960 --> 00:51:17,540

people thought didn't really exist for a

1184

00:51:21,940 --> 00:51:19,970

while and the reason that's my favorite

1185

00:51:22,120 --> 00:51:21,950

not only because I've been infected by

1186

00:51:24,410 --> 00:51:22,130

it

1187

00:51:26,990 --> 00:51:24,420

my dad just goes on

1188

00:51:29,180 --> 00:51:27,000

bloody time bloody bands like you would

1189

00:51:30,680 --> 00:51:29,190

not believe but it's a great story in

1190

00:51:34,340 --> 00:51:30,690

Australian science because we actually

1191

00:51:36,290 --> 00:51:34,350

won a Nobel Prize is the researcher no

1192

00:51:39,410 --> 00:51:36,300

one believed everyone for stomach ulcers

1193

00:51:42,680 --> 00:51:39,420

were caused by stress so he grew this in

1194

00:51:45,140 --> 00:51:42,690

a bottle and drank it and gave himself a

1195

00:51:47,420 --> 00:51:45,150

stomach ulcer and hence demonstrator

1196

00:51:49,220 --> 00:51:47,430

that this is what causes that so it's a

1197

00:51:51,740 --> 00:51:49,230

great bacteria it's a great example of

1198

00:51:53,360 --> 00:51:51,750

how bacteria manipulate the world around

1199

00:51:54,710 --> 00:51:53,370

them thank you very much few time so

1200

00:51:56,900 --> 00:51:54,720

where can we catch you online to have a

1201
00:51:59,270 --> 00:51:56,910
debate or discussion with it catch me at

1202
00:52:02,990 --> 00:51:59,280
Thomas underscore Jefferies on Twitter

1203
00:52:06,290 --> 00:52:03,000
or at Western Sydney University or on at

1204
00:52:08,590 --> 00:52:06,300
James org dot au which is our Sydney and

1205
00:52:11,480 --> 00:52:08,600
now national as of a few weeks ago

1206
00:52:13,610 --> 00:52:11,490
microbiology Society you'll have a huge

1207
00:52:16,970 --> 00:52:13,620
science weeks and may all your bacterias

1208
00:52:18,860 --> 00:52:16,980
have an external coating thank you we

1209
00:52:21,080 --> 00:52:18,870
have a Reuben the surfing scientist also

1210
00:52:23,090 --> 00:52:21,090
named after a sandwich well done now as

1211
00:52:24,740 --> 00:52:23,100
a surfing scientist I'll get the highly

1212
00:52:26,480 --> 00:52:24,750
controversial question out of the way

1213
00:52:28,040 --> 00:52:26,490

first what is the best way to get

1214

00:52:29,240 --> 00:52:28,050

yourself out of a rip if you're in one

1215

00:52:33,680 --> 00:52:29,250

what's your opinion

1216

00:52:35,570 --> 00:52:33,690

you swim parallel to the beach and soon

1217

00:52:38,390 --> 00:52:35,580

enough you will get washed into the

1218

00:52:40,970 --> 00:52:38,400

shore it's it's a very narrow little

1219

00:52:42,530 --> 00:52:40,980

current and then if you try and swim

1220

00:52:45,080 --> 00:52:42,540

against that you're stuffed but if you

1221

00:52:46,610 --> 00:52:45,090

swim at 90 degrees to the rip you'll

1222

00:52:48,410 --> 00:52:46,620

soon get washed straight back to shore

1223

00:52:49,820 --> 00:52:48,420

no what about just floating there and

1224

00:52:51,590 --> 00:52:49,830

being carried around does that work as

1225

00:52:54,200 --> 00:52:51,600

well yes you could you could float but

1226

00:52:56,780 --> 00:52:54,210

if it's a mega rip it could be a long

1227

00:52:58,310 --> 00:52:56,790

journey it might take a while because

1228

00:53:01,100 --> 00:52:58,320

we're coming up to I think or the

1229

00:53:02,180 --> 00:53:01,110

anniversary of the movie Jaws and like

1230

00:53:03,830 --> 00:53:02,190

people go haul this thing and

1231

00:53:05,660 --> 00:53:03,840

occasionally surfer will have a someone

1232

00:53:07,460 --> 00:53:05,670

have a go at him but it's not really on

1233

00:53:09,650 --> 00:53:07,470

a day-to-day level a problem at all is

1234

00:53:12,410 --> 00:53:09,660

it it's the farthest thing from a

1235

00:53:16,280 --> 00:53:12,420

problem that it could be however I know

1236

00:53:17,950 --> 00:53:16,290

the statistics quite well how unlikely

1237

00:53:21,080 --> 00:53:17,960

it is that I will get bitten by a shark

1238

00:53:23,480 --> 00:53:21,090

however if I'm at at dusk and I'm the

1239

00:53:25,130 --> 00:53:23,490

last person out I will literally walk on

1240

00:53:27,490 --> 00:53:25,140

water to get to shore the fear that

1241

00:53:29,840 --> 00:53:27,500

overcomes me I can't explain how

1242

00:53:31,310 --> 00:53:29,850

terrified I get you'll be good to that

1243

00:53:32,690 --> 00:53:31,320

that's when those that that's when

1244

00:53:33,830 --> 00:53:32,700

they're in their feeding cycle once is

1245

00:53:35,210 --> 00:53:33,840

that the said well it is or is that the

1246

00:53:37,520 --> 00:53:35,220

fact the water's dark and you can't see

1247

00:53:38,150 --> 00:53:37,530

oh look there's so many theories about

1248

00:53:41,570 --> 00:53:38,160

this

1249

00:53:44,630 --> 00:53:41,580

and it is if we do know that you should

1250

00:53:48,170 --> 00:53:44,640

probably shouldn't surf at dusk or dawn

1251
00:53:50,030 --> 00:53:48,180
but I've served so many times it does go

1252
00:53:51,740 --> 00:53:50,040
dawn it's not like at dusk or dawn

1253
00:53:53,980 --> 00:53:51,750
if you throw a piece of meat in the

1254
00:53:57,860 --> 00:53:53,990
water it would boil with shark activity

1255
00:54:00,830 --> 00:53:57,870
so if not like the risk is outrageous

1256
00:54:03,290 --> 00:54:00,840
but what happens to me is this human

1257
00:54:05,690 --> 00:54:03,300
instinct there's a circuit in my brain

1258
00:54:07,040 --> 00:54:05,700
that's very primitive and I can't wait

1259
00:54:08,810 --> 00:54:07,050
to get out of the water but if there was

1260
00:54:12,020 --> 00:54:08,820
just one other surfer out there that

1261
00:54:14,090 --> 00:54:12,030
goes away it evaporates so you know it's

1262
00:54:15,740 --> 00:54:14,100
primitive stuff and where can we see you

1263
00:54:16,910 --> 00:54:15,750

online and see what you got up to and

1264

00:54:19,490 --> 00:54:16,920

what you're doing and what do you shoot

1265

00:54:21,490 --> 00:54:19,500

videos about usually well the latest

1266

00:54:25,340 --> 00:54:21,500

thing that you'll see is I've just

1267

00:54:30,140 --> 00:54:25,350

filmed some stuff for Kids WB on channel

1268

00:54:32,750 --> 00:54:30,150

9 at 9 go Kids WB what WB is Warner

1269

00:54:36,130 --> 00:54:32,760

Brothers and it's the cartoons that they

1270

00:54:39,320 --> 00:54:36,140

play on channel 9 and in between those

1271

00:54:41,030 --> 00:54:39,330

cartoons I come on and I do little

1272

00:54:42,740 --> 00:54:41,040

science experiments and what's an

1273

00:54:45,200 --> 00:54:42,750

example of one of you did you the Jag

1274

00:54:46,970 --> 00:54:45,210

put some like c-4 explosive inside

1275

00:54:49,550 --> 00:54:46,980

someone's lunch box or so another yeah

1276

00:54:52,280 --> 00:54:49,560

yeah we built a nuclear bomb and we

1277

00:54:54,050 --> 00:54:52,290

exploded it know about time someone did

1278

00:54:55,970 --> 00:54:54,060

some work with thorium in Australia

1279

00:55:00,050 --> 00:54:55,980

we've been lagging we've been really

1280

00:55:02,360 --> 00:55:00,060

slack yeah kids TV is it's not dangerous

1281

00:55:06,590 --> 00:55:02,370

enough anymore now what we did do some

1282

00:55:09,770 --> 00:55:06,600

fun stuff made oxygen using hydrogen

1283

00:55:12,170 --> 00:55:09,780

peroxide and ordinary bleach

1284

00:55:14,540 --> 00:55:12,180

and you make enough oxygen to relight a

1285

00:55:16,220 --> 00:55:14,550

glowing splint now I've found that

1286

00:55:18,740 --> 00:55:16,230

little experiment in the Journal of

1287

00:55:21,110 --> 00:55:18,750

chemical education and unfortunately on

1288

00:55:24,380 --> 00:55:21,120

kids IV V I didn't get time to cite that

1289

00:55:26,900 --> 00:55:24,390

paper but Journal of chemical education

1290

00:55:29,600 --> 00:55:26,910

what a wonderful wonderful Journal now

1291

00:55:31,760 --> 00:55:29,610

I'm just thinking hydrogen peroxide and

1292

00:55:34,790 --> 00:55:31,770

bleached that's getting very close to v2

1293

00:55:37,610 --> 00:55:34,800

rocket fuel actually I don't know what

1294

00:55:39,740 --> 00:55:37,620

what was v2 rocket fuel was it h2 it was

1295

00:55:41,630 --> 00:55:39,750

it well yeah they had it divided up yeah

1296

00:55:42,920 --> 00:55:41,640

hot hydrogen peroxide was one of the

1297

00:55:44,810 --> 00:55:42,930

ones and they added something to it up

1298

00:55:47,720 --> 00:55:44,820

they weightless yeah right because I'm

1299

00:55:50,990 --> 00:55:47,730

the jet rocket fuel data takers when you

1300

00:55:52,250 --> 00:55:51,000

see a V V to fall over and busts and

1301

00:55:54,260 --> 00:55:52,260

there's about two seconds and then

1302

00:55:57,230 --> 00:55:54,270

suddenly both containers break and mix

1303

00:55:58,880 --> 00:55:57,240

kaboom oh and and one of those

1304

00:56:01,910 --> 00:55:58,890

containers that's going up is in fact

1305

00:56:03,650 --> 00:56:01,920

hydrogen peroxide ah ah well that makes

1306

00:56:05,990 --> 00:56:03,660

sense because if you've got ninety

1307

00:56:08,360 --> 00:56:06,000

percent hydrogen peroxide and you chuck

1308

00:56:10,970 --> 00:56:08,370

some catalyst in it it decomposes to

1309

00:56:13,520 --> 00:56:10,980

oxygen and water and the oxygen is a gas

1310

00:56:15,950 --> 00:56:13,530

and it expands rapidly and you can jet

1311

00:56:18,140 --> 00:56:15,960

propel yourself with that I was only

1312

00:56:20,420 --> 00:56:18,150

using three percent hydrogen peroxide

1313

00:56:22,310 --> 00:56:20,430

you can buy it from Woolies Cole

1314

00:56:23,810 --> 00:56:22,320

Warner von Braun that's right he went to

1315

00:56:26,300 --> 00:56:23,820

the supermarket didn't work he said no

1316

00:56:28,640 --> 00:56:26,310

we need the stronger stuff you've

1317

00:56:31,010 --> 00:56:28,650

Scottish accent yeah okay right so only

1318

00:56:32,600 --> 00:56:31,020

3% of course because all chemicals

1319

00:56:33,980 --> 00:56:32,610

aren't the same hydrogen peroxide comes

1320

00:56:36,620 --> 00:56:33,990

in different strengths that's right

1321

00:56:38,120 --> 00:56:36,630

that's right and if you're a science

1322

00:56:40,460 --> 00:56:38,130

nerd and you want to try this it's the

1323

00:56:43,130 --> 00:56:40,470

it's really great it's not my idea h2o

1324

00:56:45,770 --> 00:56:43,140

to go to Cole's or Woolworths reaper

1325

00:56:47,450 --> 00:56:45,780

sent stuff and goggles on home yeah you

1326
00:56:49,610 --> 00:56:47,460
probably should but if you're doing this

1327
00:56:51,260 --> 00:56:49,620
in an Erlenmeyer flask and you just put

1328
00:56:53,720 --> 00:56:51,270
a little bit of ordinary household

1329
00:56:56,180 --> 00:56:53,730
bleach mix just a splash you'll see a

1330
00:56:58,370 --> 00:56:56,190
lot of fizzing and every bubble is full

1331
00:57:01,460 --> 00:56:58,380
of pure oxygen and you can use that

1332
00:57:04,010 --> 00:57:01,470
oxygen to show kids that for instance if

1333
00:57:06,560 --> 00:57:04,020
you light a splint and blow it out the

1334
00:57:09,710 --> 00:57:06,570
glowing splint will reignite in that

1335
00:57:11,060 --> 00:57:09,720
oxygen and it's just it's like magic and

1336
00:57:12,260 --> 00:57:11,070
where can we find you online again to

1337
00:57:14,600 --> 00:57:12,270
have a look at your videos and things

1338
00:57:17,660 --> 00:57:14,610

ABC don't net dot a you slash science

1339

00:57:18,860 --> 00:57:17,670

slash surfing scientists yay Ruben the

1340

00:57:20,440 --> 00:57:18,870

surfing scientists thanks for talking to

1341

00:57:26,630 --> 00:57:20,450

us and have a great science week

1342

00:57:42,930 --> 00:57:33,540

[Music]

1343

00:57:47,339 --> 00:57:45,220

thank you for listening to the skeptic

1344

00:57:50,079 --> 00:57:47,349

zone on next week's show

1345

00:57:52,990 --> 00:57:50,089

speed meet the scientists part three

1346

00:57:55,720 --> 00:57:53,000

even more scientists to meet and tall

1347

00:57:57,130 --> 00:57:55,730

stories of shipwrecks that's an

1348

00:57:58,210 --> 00:57:57,140

interesting one something to look

1349

00:58:00,579 --> 00:57:58,220

forward to next week

1350

00:58:05,349 --> 00:58:00,589

also our reporter Kevin Davies brings us

1351
00:58:07,960 --> 00:58:05,359
an interview about how a Star Wars can

1352
00:58:10,660 --> 00:58:07,970
be used in military tactics that's an

1353
00:58:13,540 --> 00:58:10,670
unusual one but interesting I catch up

1354
00:58:15,250 --> 00:58:13,550
with the challenge coordinator an

1355
00:58:16,870 --> 00:58:15,260
investigator from Australian skeptics

1356
00:58:20,770 --> 00:58:16,880
Ian Bryce who's going to be giving us

1357
00:58:22,780 --> 00:58:20,780
the latest on the Higgs boson it's still

1358
00:58:25,960 --> 00:58:22,790
going I think we don't hear much about

1359
00:58:28,599 --> 00:58:25,970
it anymore we might soon find out next

1360
00:58:30,190 --> 00:58:28,609
week our new reporter and this is

1361
00:58:32,079 --> 00:58:30,200
exciting our new reporter Michelle

1362
00:58:34,270 --> 00:58:32,089
Franklin from the Northern Territory is

1363
00:58:34,799 --> 00:58:34,280

going to be telling us about Maggie the

1364

00:58:37,660 --> 00:58:34,809

moggy

1365

00:58:40,260 --> 00:58:37,670

but our special interview next week will

1366

00:58:42,579 --> 00:58:40,270

be with Professor adjunct professor

1367

00:58:45,339 --> 00:58:42,589

associate adjunct professor something

1368

00:58:48,400 --> 00:58:45,349

like that professor Paul Willis a

1369

00:58:50,710 --> 00:58:48,410

longtime friend of the skeptic zone our

1370

00:58:52,960 --> 00:58:50,720

Paul is based in Adelaide and he's going

1371

00:58:57,069 --> 00:58:52,970

to be commenting on a recent report

1372

00:58:59,770 --> 00:58:57,079

about the decline in belief in

1373

00:59:02,200 --> 00:58:59,780

creationism amongst university students

1374

00:59:05,349 --> 00:59:02,210

not surprising after all these years

1375

00:59:07,000 --> 00:59:05,359

that belief in creationism would be

1376

00:59:09,670 --> 00:59:07,010

declining it's something we just don't

1377

00:59:12,640 --> 00:59:09,680

hear much about anymore although it's

1378

00:59:14,470 --> 00:59:12,650

still there it's still there so lots to

1379

00:59:17,170 --> 00:59:14,480

look forward to on the next episode but

1380

00:59:23,829 --> 00:59:17,180

for now this is Richard Saunders signing

1381

00:59:25,900 --> 00:59:23,839

off from Sydney Australia you've been

1382

00:59:32,829 --> 00:59:25,910

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1383

00:59:35,289 --> 00:59:32,839

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1384

00:59:39,309 --> 00:59:35,299

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1385

00:59:41,049 --> 00:59:39,319

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00:59:53,319 --> 00:59:49,970

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via patreon or PayPal the sceptic zone

1392

00:59:58,420 --> 00:59:56,720

podcast is an independent production the

1393

01:00:00,579 --> 00:59:58,430

views and opinions expressed on the

1394

01:00:02,920 --> 01:00:00,589

sceptic zone are not necessarily those

1395

01:00:04,740 --> 01:00:02,930

of Australian skeptics or any other