

**The Skeptic Zone**  
**Show 248 - 19 Oct 2013**



Photo: Maya Baska

**Dr Emma Johnston**

1  
00:00:23,150 --> 00:00:09,089  
welcome to the skeptic zone the podcast

2  
00:00:29,040 --> 00:00:25,830  
hello and welcome to the skeptic zone

3  
00:00:32,840 --> 00:00:29,050  
for let's see now it's the 20th of

4  
00:00:34,860 --> 00:00:32,850  
October 2013 episode number 261

5  
00:00:39,270 --> 00:00:34,870  
richardsaunders here with you from

6  
00:00:41,190 --> 00:00:39,280  
Sydney Australia and oh my friends there

7  
00:00:43,820 --> 00:00:41,200  
are people not too far away from here

8  
00:00:46,530 --> 00:00:43,830  
having a terrible time right now with

9  
00:00:49,619 --> 00:00:46,540  
wildfires bush fires up in the mountains

10  
00:00:53,729 --> 00:00:49,629  
near Sydney it's quite dramatic and I

11  
00:00:56,460 --> 00:00:53,739  
can't underestimate or downplay the

12  
00:00:59,790 --> 00:00:56,470  
seriousness of this situation you might

13  
00:01:01,740 --> 00:00:59,800

want to run to various news websites to

14

00:01:03,509 --> 00:01:01,750

see how it's going when you're listening

15

00:01:06,540 --> 00:01:03,519

to this around the world but it is most

16

00:01:08,640 --> 00:01:06,550

serious and our thoughts are with those

17

00:01:11,520 --> 00:01:08,650

people up in the mountains battling

18

00:01:14,820 --> 00:01:11,530

fires hopefully being prepared and

19

00:01:18,149 --> 00:01:14,830

hopefully saving what they can but let's

20

00:01:20,190 --> 00:01:18,159

look to this week's skeptic zone coming

21

00:01:22,920 --> 00:01:20,200

up at the top of the show dr. Reggie

22

00:01:25,139 --> 00:01:22,930

reports dr. Ratey will be chatting with

23

00:01:28,440 --> 00:01:25,149

dr. Dave Hawkes from the Florrie

24

00:01:30,899 --> 00:01:28,450

Institute in Melbourne about naming

25

00:01:33,179 --> 00:01:30,909

viruses well sort of about naming

26

00:01:34,679 --> 00:01:33,189

viruses this is I guess you could say

27

00:01:37,230 --> 00:01:34,689

this week on the skeptic zone we have a

28

00:01:40,740 --> 00:01:37,240

real science focus so no mean viruses

29

00:01:43,380 --> 00:01:40,750

and crowdsourcing and funding of science

30

00:01:45,209 --> 00:01:43,390

very important information with dr.

31

00:01:48,480 --> 00:01:45,219

Ricci coming up at the top of the show

32

00:01:51,209 --> 00:01:48,490

and then after that I go down to Sydney

33

00:01:53,249 --> 00:01:51,219

Harbor and speak to dr. Emma Johnston

34

00:01:56,510 --> 00:01:53,259

from the Sydney Institute of Marine

35

00:01:59,459 --> 00:01:56,520

Science now Emma Johnson was so nice

36

00:02:02,219 --> 00:01:59,469

giving me her time taking me around the

37

00:02:04,950 --> 00:02:02,229

institution there down by the water of

38

00:02:06,810 --> 00:02:04,960

Sydney Harbour which was so beautiful we

39

00:02:09,320 --> 00:02:06,820

have a look at some fish tanks and she

40

00:02:11,880 --> 00:02:09,330

explains really interesting facts about

41

00:02:14,180 --> 00:02:11,890

Sydney Harbour and the health the

42

00:02:16,950 --> 00:02:14,190

well-being of Sydney Harbor which is a

43

00:02:19,620 --> 00:02:16,960

one of the world's great waterways I

44

00:02:21,930 --> 00:02:19,630

guess you could say after that it's a

45

00:02:24,810 --> 00:02:21,940

Wiggins Ines from dr. Paul Willis in the

46

00:02:28,710 --> 00:02:24,820

Royal Institution of Australia and

47

00:02:30,990 --> 00:02:28,720

talking about vasectomies yes talking

48

00:02:33,770 --> 00:02:31,000

about the unkindest cut of all now it's

49

00:02:36,170 --> 00:02:33,780

all very serious stuff it's a bit of

50

00:02:38,000 --> 00:02:36,180

you'll see why he'll here why soon with

51  
00:02:40,430 --> 00:02:38,010  
a weakened science from the Royal

52  
00:02:42,620 --> 00:02:40,440  
Institution of Australia then to ran off

53  
00:02:45,230 --> 00:02:42,630  
the show Maynard spooky action with more

54  
00:02:46,730 --> 00:02:45,240  
reports from skeptic amped Sydney may

55  
00:02:49,610 --> 00:02:46,740  
not will be speaking to a couple of

56  
00:02:53,200 --> 00:02:49,620  
presenters there one is our very own rut

57  
00:02:57,170 --> 00:02:53,210  
bag Peter Babbage about how he handles

58  
00:03:00,050 --> 00:02:57,180  
legal threats that come his way when he

59  
00:03:01,850 --> 00:03:00,060  
gets them oh boy if you're familiar with

60  
00:03:04,400 --> 00:03:01,860  
his website ratbags calm you'll

61  
00:03:06,530 --> 00:03:04,410  
understand why and Vanessa will talk

62  
00:03:08,840 --> 00:03:06,540  
about her research into the history of

63  
00:03:11,450 --> 00:03:08,850

the future yes the history of the future

64

00:03:13,220 --> 00:03:11,460

what did people or what do people think

65

00:03:14,720 --> 00:03:13,230

the future will be like well I know what

66

00:03:17,090 --> 00:03:14,730

my future is going to be like I'm going

67

00:03:20,440 --> 00:03:17,100

to run downstairs I'm going to open the

68

00:03:22,700 --> 00:03:20,450

fridge I'm gonna have a nice ginger beer

69

00:03:24,350 --> 00:03:22,710

I'm going to keep those people in the

70

00:03:39,040 --> 00:03:24,360

mountains in my thoughts while we all

71

00:03:48,530 --> 00:03:42,440

now it's time for dr. Rachel reports

72

00:03:50,390 --> 00:03:48,540

with dr. Rachel Dunlop so welcome to dr.

73

00:03:52,729 --> 00:03:50,400

David box who's joining me today on the

74

00:03:55,220 --> 00:03:52,739

Skype from Melbourne David works in

75

00:03:57,500 --> 00:03:55,230

neuroscience at the flora Research

76

00:04:00,050 --> 00:03:57,510

Institute in Victoria in Melbourne and

77

00:04:01,870 --> 00:04:00,060

he is with us today to discuss a new

78

00:04:05,540 --> 00:04:01,880

crowdsourcing project that he's

79

00:04:08,750 --> 00:04:05,550

coordinating through the flurry and for

80

00:04:11,120 --> 00:04:08,760

his work involving viruses and it's

81

00:04:14,090 --> 00:04:11,130

called name the virus so welcome to the

82

00:04:16,460 --> 00:04:14,100

sceptic zone Dave I Rachel have it

83

00:04:17,810 --> 00:04:16,470

thanks for having me back on no worries

84

00:04:19,250 --> 00:04:17,820

we talked to you quite recently actually

85

00:04:23,090 --> 00:04:19,260

didn't we about one of your recent

86

00:04:24,500 --> 00:04:23,100

papers and so now you've got a new

87

00:04:26,480 --> 00:04:24,510

project starting where you're going to

88

00:04:28,159 --> 00:04:26,490

be crowdsourcing science research so can

89

00:04:31,040 --> 00:04:28,169

you tell us a little bit about name the

90

00:04:33,080 --> 00:04:31,050

virus certainly um

91

00:04:34,969 --> 00:04:33,090

I guess one of the things as I've always

92

00:04:37,940 --> 00:04:34,979

had links to the arts community and so

93

00:04:39,469 --> 00:04:37,950

when when the office you need to have to

94

00:04:41,390 --> 00:04:39,479

involve people with actually funding

95

00:04:41,810 --> 00:04:41,400

science came up I really jumped at the

96

00:04:43,940 --> 00:04:41,820

chance

97

00:04:45,440 --> 00:04:43,950

so name the virus is the name of our

98

00:04:48,620 --> 00:04:45,450

campaign and what we're trying to do is

99

00:04:51,860 --> 00:04:48,630

raise \$10,000 and that \$10,000 will

100

00:04:54,110 --> 00:04:51,870

allow us to make four of a type of virus

101  
00:04:56,659 --> 00:04:54,120  
called a viral vector now viral vectors

102  
00:04:59,060 --> 00:04:56,669  
don't cause disease they don't have any

103  
00:05:00,620 --> 00:04:59,070  
bad effects they're not infectious but

104  
00:05:03,680 --> 00:05:00,630  
what they can do is they can go into a

105  
00:05:07,010 --> 00:05:03,690  
cell and change the way a cell acts now

106  
00:05:09,200 --> 00:05:07,020  
in terms of the human brain we don't

107  
00:05:11,300 --> 00:05:09,210  
know what most cells do or if we know

108  
00:05:12,860 --> 00:05:11,310  
what the cell does we don't know what

109  
00:05:14,450 --> 00:05:12,870  
the connections it does with the rest of

110  
00:05:16,640 --> 00:05:14,460  
the brain with Unruh billion cells in

111  
00:05:18,680 --> 00:05:16,650  
brain that's that's a lot of connection

112  
00:05:21,800 --> 00:05:18,690  
so these viruses you can go on and you

113  
00:05:24,980 --> 00:05:21,810

can find out what a cell does when it's

114

00:05:27,050 --> 00:05:24,990

excited or what certain proteins do and

115

00:05:29,750 --> 00:05:27,060

this is why I use these two viral

116

00:05:32,930 --> 00:05:29,760

vectors so the four viral vectors are

117

00:05:34,730 --> 00:05:32,940

trying to get going will help us work on

118

00:05:36,370 --> 00:05:34,740

research some of our previous viruses

119

00:05:39,190 --> 00:05:36,380

are currently being used to look at

120

00:05:43,310 --> 00:05:39,200

anxiety eating and sleeping disorders

121

00:05:46,010 --> 00:05:43,320

multiple sclerosis epilepsy memory

122

00:05:47,570 --> 00:05:46,020

learning there's probably a few others

123

00:05:48,680 --> 00:05:47,580

sort of split might have slipped my mind

124

00:05:51,500 --> 00:05:48,690

at the moment

125

00:05:53,780 --> 00:05:51,510

so this is quite quite a new approach to

126

00:05:56,120 --> 00:05:53,790

raising money for science isn't it this

127

00:05:59,660 --> 00:05:56,130

is through the well-known crowdsourcing

128

00:06:01,430 --> 00:05:59,670

I guess portal called possible but this

129

00:06:04,640 --> 00:06:01,440

is the first time possible has been

130

00:06:07,850 --> 00:06:04,650

offering a scientific research arm to

131

00:06:09,440 --> 00:06:07,860

their platform is that right yes so what

132

00:06:11,810 --> 00:06:09,450

happened was that they gave a little bit

133

00:06:13,250 --> 00:06:11,820

of trial earlier in the year and there

134

00:06:15,200 --> 00:06:13,260

was a project called mighty maggots

135

00:06:17,900 --> 00:06:15,210

which actually got a lot of interest

136

00:06:20,270 --> 00:06:17,910

with dr. Mel Thompson through through

137

00:06:22,190 --> 00:06:20,280

Twitter and this was sort of dipping

138

00:06:24,020 --> 00:06:22,200

their toe in the water and they did

139

00:06:27,380 --> 00:06:24,030

quite well most of the projects got

140

00:06:28,580 --> 00:06:27,390

funded so they were so interested in the

141

00:06:31,430 --> 00:06:28,590

interest from the scientific community

142

00:06:33,560 --> 00:06:31,440

was so large that as of Monday which is

143

00:06:36,740 --> 00:06:33,570

when our project launches which i think

144

00:06:39,380 --> 00:06:36,750

is at 21st they're actually launching an

145

00:06:42,110 --> 00:06:39,390

entire research arm so the flurry has

146

00:06:44,630 --> 00:06:42,120

six projects in I think Deakin has a few

147

00:06:50,150 --> 00:06:44,640

more in and then in the coming month or

148

00:06:52,370 --> 00:06:50,160

two month there's - University UTS and a

149

00:06:53,630 --> 00:06:52,380

few others are also going to join and it

150

00:06:57,590 --> 00:06:53,640

will be a way for the scientific

151  
00:06:59,330 --> 00:06:57,600  
community to actually create create

152  
00:07:01,190 --> 00:06:59,340  
bonds with with the wider community I

153  
00:07:02,630 --> 00:07:01,200  
mean the one of the reasons I'm doing

154  
00:07:06,260 --> 00:07:02,640  
the 10 tests until this is certainly

155  
00:07:07,850 --> 00:07:06,270  
very nice but it's that I I grew up in

156  
00:07:10,280 --> 00:07:07,860  
the outer suburbs of Melbourne and I

157  
00:07:13,400 --> 00:07:10,290  
think it's similar for most people who

158  
00:07:15,260 --> 00:07:13,410  
grow outside grew up in sort of suburbia

159  
00:07:17,420 --> 00:07:15,270  
I didn't know any scientists I didn't

160  
00:07:19,880 --> 00:07:17,430  
have any real knowledge of how science

161  
00:07:21,830 --> 00:07:19,890  
happened so anyone who gives a donation

162  
00:07:23,300 --> 00:07:21,840  
we're going to just keep you in touch

163  
00:07:25,760 --> 00:07:23,310

with what's happening with the project

164

00:07:27,530 --> 00:07:25,770

and you know the up to the downs when

165

00:07:30,110 --> 00:07:27,540

things work when things don't work maybe

166

00:07:32,840 --> 00:07:30,120

give you an idea of what science is and

167

00:07:34,550 --> 00:07:32,850

hopefully some kids or even adults who

168

00:07:37,370 --> 00:07:34,560

are looking to get into the field will

169

00:07:38,600 --> 00:07:37,380

get a bit of a more realistic idea yes I

170

00:07:40,159 --> 00:07:38,610

was gonna ask you about that Dave

171

00:07:43,460 --> 00:07:40,169

because obviously you want some sort of

172

00:07:44,659 --> 00:07:43,470

hooks for people to to get involved in

173

00:07:46,490 --> 00:07:44,669

the project and the whole point of

174

00:07:49,400 --> 00:07:46,500

crowdsourcing is so people get something

175

00:07:51,710 --> 00:07:49,410

back from what they give you so do you

176

00:07:54,020 --> 00:07:51,720

have levels of donations for which you

177

00:07:55,270 --> 00:07:54,030

get increasingly higher benefits or how

178

00:07:59,540 --> 00:07:55,280

are you going to work that sort of

179

00:08:01,870 --> 00:07:59,550

tiered donation okay well I mean there's

180

00:08:03,160 --> 00:08:01,880

it completely correct that it's all

181

00:08:05,770 --> 00:08:03,170

about sort of the rewards with

182

00:08:07,120 --> 00:08:05,780

crowdsourcing so \$20 is sort of the

183

00:08:08,410 --> 00:08:07,130

first reward where you offer them what

184

00:08:10,060 --> 00:08:08,420

we'll do is well we'll give you a

185

00:08:12,790 --> 00:08:10,070

thank-you on our Twitter which is named

186

00:08:14,590 --> 00:08:12,800

the virus one or in our Facebook which

187

00:08:15,730 --> 00:08:14,600

let's just name the virus and the other

188

00:08:19,360 --> 00:08:15,740

thing you'll do is you can actually

189

00:08:21,430 --> 00:08:19,370

submit a name so you know if dr. Rachel

190

00:08:24,250 --> 00:08:21,440

gets on there she donates \$20 you can

191

00:08:26,650 --> 00:08:24,260

actually suggest skeptic zone and if we

192

00:08:28,360 --> 00:08:26,660

get more than two and a half thousand

193

00:08:30,750 --> 00:08:28,370

dollars worth of donations with the name

194

00:08:33,640 --> 00:08:30,760

skeptic zone we'll name the virus that

195

00:08:35,560 --> 00:08:33,650

so if you want to call it the Melbourne

196

00:08:37,839 --> 00:08:35,570

virus you want to call it the the

197

00:08:40,330 --> 00:08:37,849

skeptic zone virus you can actually get

198

00:08:43,390 --> 00:08:40,340

very creative obviously the other thing

199

00:08:45,160 --> 00:08:43,400

is if you've got \$2,500 and you want to

200

00:08:47,170 --> 00:08:45,170

donate that as a block you can obviously

201  
00:08:49,360 --> 00:08:47,180  
get to name the virus now it's about ten

202  
00:08:51,280 --> 00:08:49,370  
letters and it has to be socially

203  
00:08:53,470 --> 00:08:51,290  
acceptable

204  
00:08:55,180 --> 00:08:53,480  
I imagine I've probably offended a few

205  
00:08:57,880 --> 00:08:55,190  
people and a lot of ideas are flying out

206  
00:09:00,730 --> 00:08:57,890  
the window at the moment but you know it

207  
00:09:03,760 --> 00:09:00,740  
can be Holden HSV it can be Ford you can

208  
00:09:06,670 --> 00:09:03,770  
call it whatever you want and Endel name

209  
00:09:09,280 --> 00:09:06,680  
the viral vector of you probably the one

210  
00:09:11,980 --> 00:09:09,290  
that I'm I think is the one I'm most

211  
00:09:15,010 --> 00:09:11,990  
nervous about is our our \$500 reward

212  
00:09:16,900 --> 00:09:15,020  
which is you come and come to the

213  
00:09:19,570 --> 00:09:16,910

Florrie and I'll give you a tour of

214

00:09:21,190 --> 00:09:19,580

where we make the viruses and the flurry

215

00:09:23,650 --> 00:09:21,200

for anyone who doesn't know is in the

216

00:09:26,560 --> 00:09:23,660

middle of the park bill a university

217

00:09:28,060 --> 00:09:26,570

precinct and it's about five floors high

218

00:09:29,920 --> 00:09:28,070

and we've got a tea room that looks out

219

00:09:31,690 --> 00:09:29,930

over Royal Park and is quite lovely and

220

00:09:36,060 --> 00:09:31,700

for five hundred dollars I'll not only

221

00:09:40,660 --> 00:09:38,860

yeah for about two years I've been

222

00:09:42,910 --> 00:09:40,670

cooking my way and posting on Facebook

223

00:09:45,160 --> 00:09:42,920

recipes from Jamie Oliver's America

224

00:09:46,600 --> 00:09:45,170

roadtrip cookbook I'm a big fan of

225

00:09:49,000 --> 00:09:46,610

install and I'm a big fan of American

226

00:09:52,150 --> 00:09:49,010

food so I've done about 60 or 70 other

227

00:09:54,490 --> 00:09:52,160

recipes and so if you come along you'll

228

00:09:55,900 --> 00:09:54,500

get to get a tour and then obviously

229

00:09:57,340 --> 00:09:55,910

while I'm cooking you can have a chat

230

00:09:59,650 --> 00:09:57,350

you can ask any comments any questions

231

00:10:01,840 --> 00:09:59,660

you've got about science and enjoy a

232

00:10:05,890 --> 00:10:01,850

beautiful view from the fifth floor of

233

00:10:07,870 --> 00:10:05,900

the flurry so that sounds great but even

234

00:10:10,600 --> 00:10:07,880

people that can't afford to give say

235

00:10:12,970 --> 00:10:10,610

that much money even if we drop in ten

236

00:10:15,180 --> 00:10:12,980

or twenty dollars how can we follow the

237

00:10:16,920 --> 00:10:15,190

progress of the project where what

238

00:10:18,360 --> 00:10:16,930

sort of social media you're gonna have

239

00:10:21,350 --> 00:10:18,370

running at the same time where you have

240

00:10:24,390 --> 00:10:21,360

a website how can we follow it

241

00:10:26,010 --> 00:10:24,400

absolutely I the conversation with

242

00:10:29,220 --> 00:10:26,020

people and people get involved as what

243

00:10:33,120 --> 00:10:29,230

I'm interested in so name the virus or

244

00:10:34,860 --> 00:10:33,130

words one so at nine the virus one on

245

00:10:36,480 --> 00:10:34,870

Twitter where we've been going for a

246

00:10:37,620 --> 00:10:36,490

couple of months so you can sort of see

247

00:10:39,780 --> 00:10:37,630

what we're doing we've got some nice

248

00:10:41,370 --> 00:10:39,790

sort of links and pictures they're also

249

00:10:43,260 --> 00:10:41,380

a bit of information about viral vectors

250

00:10:45,090 --> 00:10:43,270

and will sort of be obviously keeping

251  
00:10:46,230 --> 00:10:45,100  
keeping track of that while the projects

252  
00:10:48,360 --> 00:10:46,240  
going and even afterwards

253  
00:10:50,610 --> 00:10:48,370  
we've got named the virus on Facebook

254  
00:10:53,430 --> 00:10:50,620  
and the other thing is anyone who

255  
00:10:55,350 --> 00:10:53,440  
donates we're also going to keep in

256  
00:10:57,450 --> 00:10:55,360  
touch we'll we'll keep you in touch with

257  
00:10:59,940 --> 00:10:57,460  
emails obviously if you don't want to

258  
00:11:02,550 --> 00:10:59,950  
that's not a problem but I want to start

259  
00:11:05,100 --> 00:11:02,560  
a conversation with people because you

260  
00:11:06,660 --> 00:11:05,110  
know I've been on Twitter for nearly a

261  
00:11:08,370 --> 00:11:06,670  
year now and the amount of people that

262  
00:11:10,620 --> 00:11:08,380  
ask me questions they're going it's bug

263  
00:11:12,330 --> 00:11:10,630

my few years I don't understand it can

264

00:11:14,550 --> 00:11:12,340

you just explain I've tried to read it

265

00:11:17,340 --> 00:11:14,560

I've looked at dr. Google I don't get it

266

00:11:19,560 --> 00:11:17,350

and there's four of us on the project so

267

00:11:22,200 --> 00:11:19,570

there's a variety of different skill

268

00:11:23,730 --> 00:11:22,210

sets and and obviously we just want to

269

00:11:26,190 --> 00:11:23,740

actually talk about science and

270

00:11:28,710 --> 00:11:26,200

obviously viral vectors neuroscience is

271

00:11:30,180 --> 00:11:28,720

the topic we're looking at here but you

272

00:11:33,300 --> 00:11:30,190

know I'm more than happy to branch out

273

00:11:34,380 --> 00:11:33,310

or direct them to someone who can so I

274

00:11:36,540 --> 00:11:34,390

think you raised a really interesting

275

00:11:38,940 --> 00:11:36,550

point Dave and that is focusing on the

276

00:11:40,530 --> 00:11:38,950

communicating the science to people now

277

00:11:43,110 --> 00:11:40,540

scientists are often criticized for that

278

00:11:44,580 --> 00:11:43,120

and I'm quite critical of scientists for

279

00:11:46,920 --> 00:11:44,590

doing that too because I think is

280

00:11:49,950 --> 00:11:46,930

incredibly important for us to talk

281

00:11:52,080 --> 00:11:49,960

about our work openly so in terms of

282

00:11:55,320 --> 00:11:52,090

crowdsourcing I think it covers two

283

00:11:58,110 --> 00:11:55,330

areas quite well one is funding for

284

00:12:00,240 --> 00:11:58,120

science which is seriously tight at the

285

00:12:02,490 --> 00:12:00,250

moment and getting harder and also

286

00:12:05,400 --> 00:12:02,500

letting people know what we do because I

287

00:12:06,750 --> 00:12:05,410

think it's unfair of us to boffin away

288

00:12:09,210 --> 00:12:06,760

in our labs without talking to the

289

00:12:11,910 --> 00:12:09,220

public and I think do you agree that

290

00:12:13,620 --> 00:12:11,920

this will hopefully open up more of a

291

00:12:15,060 --> 00:12:13,630

public understanding of science as well

292

00:12:17,490 --> 00:12:15,070

so that eventually we might be able to

293

00:12:20,760 --> 00:12:17,500

get some more tracks and more government

294

00:12:24,600 --> 00:12:20,770

funding for example absolutely I mean I

295

00:12:25,829 --> 00:12:24,610

I think that I think I remember the

296

00:12:27,329 --> 00:12:25,839

grants that go in each year that

297

00:12:28,550 --> 00:12:27,339

researchers spend a lot of time I think

298

00:12:30,379 --> 00:12:28,560

they're getting funded about

299

00:12:33,860 --> 00:12:30,389

sixteen percent will get funded this

300

00:12:38,210 --> 00:12:33,870

year which is not a heap now obviously

301  
00:12:40,189 --> 00:12:38,220  
and we can talk to government but I

302  
00:12:42,139 --> 00:12:40,199  
think that if people a lot of people

303  
00:12:43,910 --> 00:12:42,149  
don't do size beyond high school and a

304  
00:12:46,100 --> 00:12:43,920  
lot of people don't realize how much of

305  
00:12:48,139 --> 00:12:46,110  
their lives is is run by science I mean

306  
00:12:50,629 --> 00:12:48,149  
the classic is Wi-Fi is an Australian

307  
00:12:52,040 --> 00:12:50,639  
invention from the physicists who we

308  
00:12:54,850 --> 00:12:52,050  
occasionally mentioned and acknowledged

309  
00:12:57,769 --> 00:12:54,860  
but as biologists we've we've sort of

310  
00:12:59,689 --> 00:12:57,779  
there's so many things that were

311  
00:13:02,749 --> 00:12:59,699  
involved in on trying to understand how

312  
00:13:04,699 --> 00:13:02,759  
why why we get anxious and why we get

313  
00:13:06,590 --> 00:13:04,709

anxiety conditions because they they

314

00:13:07,879 --> 00:13:06,600

affect our blood pressure which can you

315

00:13:10,369 --> 00:13:07,889

know increase your chance of heart

316

00:13:12,769 --> 00:13:10,379

attack or stroke and a lot of people

317

00:13:14,480 --> 00:13:12,779

everyone understands stress everyone

318

00:13:17,360 --> 00:13:14,490

gets stressed and everyone kind of go oh

319

00:13:20,019 --> 00:13:17,370

it's it's not good or it's kind of

320

00:13:22,489 --> 00:13:20,029

natural or it's fight or flight and

321

00:13:24,710 --> 00:13:22,499

that's kind of where most people end up

322

00:13:27,019 --> 00:13:24,720

but if they knew that people actually

323

00:13:28,999 --> 00:13:27,029

resourcing researching this and

324

00:13:30,999 --> 00:13:29,009

understanding it or there's this

325

00:13:33,949 --> 00:13:31,009

scientist who's published a paper on

326

00:13:37,780 --> 00:13:33,959

blue-green algae and and motor neuron

327

00:13:40,490 --> 00:13:37,790

diseases you might have seen it never

328

00:13:42,530 --> 00:13:40,500

what there was another one where where

329

00:13:46,280 --> 00:13:42,540

people can kind of go oh I get this I

330

00:13:48,170 --> 00:13:46,290

can see that science isn't a book kept

331

00:13:50,960 --> 00:13:48,180

in a library science is a living

332

00:13:52,519 --> 00:13:50,970

breathing thing it's there it's a way of

333

00:13:54,889 --> 00:13:52,529

finding knowledge and so if people can

334

00:13:57,679 --> 00:13:54,899

actually talk to a scientist and realize

335

00:14:01,730 --> 00:13:57,689

that we're not all number one mail old

336

00:14:03,949 --> 00:14:01,740

white-haired which is the stereotypes

337

00:14:05,780 --> 00:14:03,959

like I've rocked up to two schools I've

338

00:14:07,610 --> 00:14:05,790

done a lot of schools visits and I'm

339

00:14:10,100 --> 00:14:07,620

there anyone hasn't seen me off about

340

00:14:12,079 --> 00:14:10,110

six foot tall I'm about 90 kilos I've

341

00:14:13,669 --> 00:14:12,089

got a number of tattoos and I've got a

342

00:14:16,340 --> 00:14:13,679

shaved head so a lot of people kind of

343

00:14:19,879 --> 00:14:16,350

often go I'm sorry we asked for a

344

00:14:21,889 --> 00:14:19,889

scientist but exactly this thing same

345

00:14:23,900 --> 00:14:21,899

thing happens if you send out a young

346

00:14:25,730 --> 00:14:23,910

woman or a woman yeah a lot of the time

347

00:14:28,579 --> 00:14:25,740

to go I'm sorry and you would obviously

348

00:14:31,429 --> 00:14:28,589

be more experienced with this this day

349

00:14:33,259 --> 00:14:31,439

expect scientists to be old men and so

350

00:14:35,150 --> 00:14:33,269

by having that interaction that yeah

351

00:14:36,829 --> 00:14:35,160

this scientist is the same age as you

352

00:14:39,790 --> 00:14:36,839

follows the same football team or a

353

00:14:41,870 --> 00:14:39,800

different one and people who kind of

354

00:14:44,150 --> 00:14:41,880

understand that

355

00:14:46,040 --> 00:14:44,160

so these are people same as me doing

356

00:14:48,379 --> 00:14:46,050

stuff and this is why they're doing it

357

00:14:49,699 --> 00:14:48,389

and if you've got an educated you know

358

00:14:51,559 --> 00:14:49,709

and I don't want everyone to become

359

00:14:53,930 --> 00:14:51,569

scientists because it's it's competitive

360

00:14:56,300 --> 00:14:53,940

enough but if people understand science

361

00:14:58,809 --> 00:14:56,310

they won't be number one fooled by

362

00:15:02,269 --> 00:14:58,819

things like power bands and homeopathy

363

00:15:04,790 --> 00:15:02,279

number two they'll go well okay we're

364

00:15:06,920 --> 00:15:04,800

putting for every dollar we invest in in

365

00:15:08,449 --> 00:15:06,930

medical research we can save up to six

366

00:15:10,730 --> 00:15:08,459

dollars in the healthcare system

367

00:15:13,129 --> 00:15:10,740

now I can tell that to politicians and

368

00:15:15,680 --> 00:15:13,139

they hear that every day but if the

369

00:15:18,680 --> 00:15:15,690

entire community understands that they

370

00:15:20,860 --> 00:15:18,690

they tell their politicians and it's

371

00:15:23,240 --> 00:15:20,870

much easier to have ten thousand voices

372

00:15:25,100 --> 00:15:23,250

telling their local member that then

373

00:15:27,230 --> 00:15:25,110

then one person who gets a one-on-one

374

00:15:29,480 --> 00:15:27,240

meeting if I don't get the crowd funding

375

00:15:31,189 --> 00:15:29,490

my workbook go on it just might be you

376

00:15:33,139 --> 00:15:31,199

know a little bit slower like I've got

377

00:15:34,639 --> 00:15:33,149

machines there that a the machine that

378

00:15:36,590 --> 00:15:34,649

spins a virus is one hundred and twenty

379

00:15:37,879 --> 00:15:36,600

thousand dollars so the ten thousand

380

00:15:40,400 --> 00:15:37,889

dollars is sort of a way to kick start

381

00:15:42,740 --> 00:15:40,410

the conversation with people because my

382

00:15:44,360 --> 00:15:42,750

what I'd love to happen is for people to

383

00:15:46,460 --> 00:15:44,370

get on board people understand it people

384

00:15:48,889 --> 00:15:46,470

to be really passionate about it people

385

00:15:51,439 --> 00:15:48,899

to be able to follow their scientists

386

00:15:53,600 --> 00:15:51,449

which would be me and to be able to sort

387

00:15:56,540 --> 00:15:53,610

of go oh yeah we know Dave he's you know

388

00:15:58,249 --> 00:15:56,550

I was you know I was on that project I

389

00:16:00,319 --> 00:15:58,259

got together with my Rotary Club when we

390

00:16:02,960 --> 00:16:00,329

donated that the money and now we're on

391

00:16:04,879 --> 00:16:02,970

a paper because if you donate a thousand

392

00:16:06,679 --> 00:16:04,889

dollars you'll actually get your name on

393

00:16:09,650 --> 00:16:06,689

the scientific the next scientific paper

394

00:16:10,960 --> 00:16:09,660

we published with it viruses are cool no

395

00:16:13,519 --> 00:16:10,970

matter what if you look at Hollywood

396

00:16:15,290 --> 00:16:13,529

viruses are cool the last-born film was

397

00:16:17,809 --> 00:16:15,300

about viral vectors which is what I work

398

00:16:20,470 --> 00:16:17,819

in you look at I am Legend is about a

399

00:16:24,620 --> 00:16:20,480

viral vector it's all about viruses so

400

00:16:28,189 --> 00:16:24,630

it's kind of cool and brains are where

401  
00:16:30,559 --> 00:16:28,199  
research is so you're combining two of

402  
00:16:33,980 --> 00:16:30,569  
the sexiest parts of scientists science

403  
00:16:36,829 --> 00:16:33,990  
and making them accessible for people so

404  
00:16:40,730 --> 00:16:36,839  
hopefully people jump on board and and

405  
00:16:43,309 --> 00:16:40,740  
start this conversation right so Dave

406  
00:16:44,780 --> 00:16:43,319  
you launched tomorrow can you give us we

407  
00:16:46,220 --> 00:16:44,790  
launched tomorrow okay

408  
00:16:47,900 --> 00:16:46,230  
so can you give us all the details of

409  
00:16:51,160 --> 00:16:47,910  
where everyone needs to go to follow you

410  
00:16:55,290 --> 00:16:51,170  
and like you and give you monies

411  
00:16:58,170 --> 00:16:55,300  
no way so as I said the the name

412  
00:17:00,389 --> 00:16:58,180  
the virus won on Twitter so at 9:00 the

413  
00:17:03,870 --> 00:17:00,399

virus one name the virus on Facebook if

414

00:17:09,000 --> 00:17:03,880

you go to possible which is possible

415

00:17:12,689 --> 00:17:09,010

calm I know you're in America so possible

416

00:17:14,010 --> 00:17:12,699

ele calm and just look for name the

417

00:17:16,140 --> 00:17:14,020

virus will be up there I think we're

418

00:17:18,630 --> 00:17:16,150

launching midday tomorrow the other

419

00:17:23,400 --> 00:17:18,640

thing is I'm on Twitter at mr. Hawkes

420

00:17:24,720 --> 00:17:23,410

Moho wk yes so even even if you can't

421

00:17:26,610 --> 00:17:24,730

donate come and give me a yell and

422

00:17:28,470 --> 00:17:26,620

hopefully you know you can get on board

423

00:17:30,450 --> 00:17:28,480

with it understanding sort of some of

424

00:17:32,640 --> 00:17:30,460

the science things we'd love to get your

425

00:17:35,280 --> 00:17:32,650

money but if you can't afford it that's

426

00:17:37,049 --> 00:17:35,290

not a problem just kind of say hi either

427

00:17:39,270 --> 00:17:37,059

than his Twitter cancel the Facebook and

428

00:17:41,299 --> 00:17:39,280

yeah hopefully you can you can have a

429

00:17:43,590 --> 00:17:41,309

learn a little bit about what we do and

430

00:17:45,360 --> 00:17:43,600

yeah you'll find it interesting

431

00:17:47,700 --> 00:17:45,370

alright well Dave how long suppose

432

00:17:50,730 --> 00:17:47,710

you're gonna run for I think we're

433

00:17:53,940 --> 00:17:50,740

running for about 45 days so if we we

434

00:17:56,580 --> 00:17:53,950

get our \$10,000 earlier we'll keep going

435

00:17:58,560 --> 00:17:56,590

because as I said it's about \$2,500 of

436

00:18:00,750 --> 00:17:58,570

virus so if we get the 10 grand that's

437

00:18:03,210 --> 00:18:00,760

for if we get 12 and a half grand that's

438

00:18:05,760 --> 00:18:03,220

five and so on so we'll go for the full

439

00:18:07,110 --> 00:18:05,770

45 days because if you guys can be more

440

00:18:08,970 --> 00:18:07,120

money I can certainly do some stuff with

441

00:18:10,500 --> 00:18:08,980

it right well good luck with it Dave and

442

00:18:20,570 --> 00:18:10,510

thanks for talking to us today on the

443

00:18:20,580 --> 00:18:28,770

in a world with excel is apparently

444

00:18:28,780 --> 00:18:36,680

our messages are received for beyond

445

00:18:42,760 --> 00:18:39,979

and reason is sidelined for magical

446

00:18:52,090 --> 00:18:49,750

oh please we stand between what date is

447

00:18:53,799 --> 00:18:52,100

it seven eight seven thing this is

448

00:18:55,450 --> 00:18:53,809

impressive if these are system persons

449

00:19:00,580 --> 00:18:55,460

they're not there photographs of Chinese

450

00:19:02,230 --> 00:19:00,590

anthem good God we're fully discuss

451

00:19:13,870 --> 00:19:02,240

cryptozoology on the show very often

452

00:19:15,850 --> 00:19:13,880

because we skeptic to the cave and Moses

453

00:19:30,370 --> 00:19:15,860

has captured society finders on iTunes

454

00:19:34,150 --> 00:19:30,380

or you know don't what a beautiful day

455

00:19:36,730 --> 00:19:34,160

it is here Sydney Harbor I'm at chowder

456

00:19:39,730 --> 00:19:36,740

bathed up here here looking up

457

00:19:41,950 --> 00:19:39,740

it's gorgeous there's not a cloud in the

458

00:19:44,680 --> 00:19:41,960

sky it's a nice warm day I can see a

459

00:19:46,720 --> 00:19:44,690

seaplane over there to my left and

460

00:19:50,110 --> 00:19:46,730

there's some fairies way over to my

461

00:19:52,870 --> 00:19:50,120

right and I'm with dr. Andrew Johnson

462

00:19:54,430 --> 00:19:52,880

hello hello how are you I'm well I'm

463

00:19:57,340 --> 00:19:54,440

having a wonderful day here you've

464

00:19:59,140 --> 00:19:57,350

kindly invited me here to discuss

465

00:20:00,669 --> 00:19:59,150

something which I find very interesting

466

00:20:03,040 --> 00:20:00,679

and very important of course which is

467

00:20:05,590 --> 00:20:03,050

the health and the well-being and the

468

00:20:07,480 --> 00:20:05,600

science of Sydney Harbour that's right

469

00:20:09,130 --> 00:20:07,490

so I'm director of the Sydney Harbour

470

00:20:11,830 --> 00:20:09,140

Research Program for the sydney

471

00:20:13,900 --> 00:20:11,840

institute of marine science and it's a

472

00:20:16,180 --> 00:20:13,910

fantastic job because we have got a

473

00:20:18,070 --> 00:20:16,190

spectacularly beautiful harbour but it's

474

00:20:21,100 --> 00:20:18,080

also incredibly biologically diverse it

475

00:20:22,600 --> 00:20:21,110

has some challenges and so the health of

476

00:20:24,220 --> 00:20:22,610

the harbour is a very important topic

477

00:20:26,380 --> 00:20:24,230

that we tackle in the sydney harbour

478

00:20:28,120 --> 00:20:26,390

research program but it's also days like

479

00:20:30,820 --> 00:20:28,130

this that make me just suit back the

480

00:20:34,750 --> 00:20:30,830

beach I have this job it's folks it's

481

00:20:36,940 --> 00:20:34,760

hard to describe just how beautiful it

482

00:20:38,740 --> 00:20:36,950

is the setting there's a beach behind us

483

00:20:40,900 --> 00:20:38,750

I can see some joggers and a dog over

484

00:20:45,100 --> 00:20:40,910

there the water is lapping along these

485

00:20:47,200 --> 00:20:45,110

old historic area here and you're

486

00:20:50,410 --> 00:20:47,210

telling me that that little funny pool

487

00:20:51,240 --> 00:20:50,420

or empty pool we see over there used to

488

00:20:54,300 --> 00:20:51,250

be you

489

00:20:57,630 --> 00:20:54,310

to construct the mind that's right so

490

00:21:00,510 --> 00:20:57,640

we're located at a heritage site we've

491

00:21:02,340 --> 00:21:00,520

done some work with the buildings so

492

00:21:03,990 --> 00:21:02,350

that we can do scientific research in

493

00:21:06,270 --> 00:21:04,000

them so there's laboratories but we've

494

00:21:07,770 --> 00:21:06,280

tried to retain the outside of the

495

00:21:09,360 --> 00:21:07,780

buildings to be very similar to what

496

00:21:11,310 --> 00:21:09,370

they've been in the past which is

497

00:21:14,070 --> 00:21:11,320

gorgeous so there are sandstone blocks

498

00:21:15,780 --> 00:21:14,080

obviously as the foundation for most of

499

00:21:17,820 --> 00:21:15,790

these buildings and then these beautiful

500

00:21:21,030 --> 00:21:17,830

weatherboard structures but it was

501  
00:21:22,890 --> 00:21:21,040  
actually a mine construction facility so

502  
00:21:25,770 --> 00:21:22,900  
they used to make mines when they were

503  
00:21:28,680 --> 00:21:25,780  
worried about the Russians in fact there

504  
00:21:30,060 --> 00:21:28,690  
was coming into the area but

505  
00:21:31,950 --> 00:21:30,070  
unfortunately they had a terrible

506  
00:21:33,690 --> 00:21:31,960  
accident one day in front of the

507  
00:21:35,280 --> 00:21:33,700  
governor and many many thousands of

508  
00:21:38,340 --> 00:21:35,290  
spectators where some of the mines

509  
00:21:40,290 --> 00:21:38,350  
accidentally blew up at the wrong time

510  
00:21:42,230 --> 00:21:40,300  
and four people were killed and eleven

511  
00:21:44,970 --> 00:21:42,240  
injured so this place was shut down

512  
00:21:48,120 --> 00:21:44,980  
before it had an opportunity to do much

513  
00:21:50,010 --> 00:21:48,130

great work but fortunately for us the

514

00:21:51,510 --> 00:21:50,020

facilities are still in good Nick we

515

00:21:54,690 --> 00:21:51,520

have this gorgeous pier which has been

516

00:21:56,970 --> 00:21:54,700

yeah restored if you look into the water

517

00:21:58,710 --> 00:21:56,980

just peering over the pier that's right

518

00:22:02,010 --> 00:21:58,720

you can see some of the lovely life of

519

00:22:05,430 --> 00:22:02,020

Sydney Harbor and we've seen banks of

520

00:22:08,100 --> 00:22:05,440

what some helped kill so that's a Cloney

521

00:22:10,590 --> 00:22:08,110

radiata which is our major temperate

522

00:22:11,010 --> 00:22:10,600

water kelp it's lovely Bluegreen water

523

00:22:14,640 --> 00:22:11,020

today

524

00:22:17,370 --> 00:22:14,650

the kelp forms almost forests well you

525

00:22:19,410 --> 00:22:17,380

know shrubs help forest that's right

526

00:22:21,000 --> 00:22:19,420

first so it's very important habitat

527

00:22:26,760 --> 00:22:21,010

form a lot of fish species a lot of

528

00:22:28,800 --> 00:22:26,770

urgency and it kinda sort of yes and

529

00:22:30,780 --> 00:22:28,810

then if you look further onto the hard

530

00:22:32,430 --> 00:22:30,790

substrates you can see what we were what

531

00:22:34,560 --> 00:22:32,440

we haven't Sydney Harbour classic in the

532

00:22:38,250 --> 00:22:34,570

intertidal zone lots and lots of healthy

533

00:22:40,320 --> 00:22:38,260

oysters yes these old pylons here which

534

00:22:42,270 --> 00:22:40,330

is just a couple of metres out in front

535

00:22:44,730 --> 00:22:42,280

of us that covered the bases are covered

536

00:22:46,260 --> 00:22:44,740

with the oysters yeah that's the Sydney

537

00:22:47,700 --> 00:22:46,270

Rock oyster and just below the Sydney

538

00:22:49,560 --> 00:22:47,710

Rock oyster before you hit the kelp

539

00:22:52,620 --> 00:22:49,570

you've got this ring of sea squirts

540

00:22:53,760 --> 00:22:52,630

which are congee yeah yes yes I remember

541

00:22:55,110 --> 00:22:53,770

those from when I was a kid at the beach

542

00:22:57,690 --> 00:22:55,120

yeah that's right and people often use

543

00:22:59,460 --> 00:22:57,700

them the inside of them for bait so

544

00:23:01,470 --> 00:22:59,470

get the but the kanji and take the

545

00:23:03,330 --> 00:23:01,480

inside in other countries sea squirts

546

00:23:05,370 --> 00:23:03,340

are actually eaten as well it's in Japan

547

00:23:07,590 --> 00:23:05,380

they're a delicacy yeah I haven't tried

548

00:23:09,390 --> 00:23:07,600

them myself I'm not I'm not that tempted

549

00:23:15,300 --> 00:23:09,400

to either myself right now

550

00:23:16,860 --> 00:23:15,310

so you work in a very idyllic place oh

551

00:23:19,590 --> 00:23:16,870

there goes the manly ferry if we look

552

00:23:25,910 --> 00:23:19,600

over there to our that's right no having

553

00:23:30,570 --> 00:23:28,950

that's right yeah so we do work in a

554

00:23:32,700 --> 00:23:30,580

very spectacular spot and one of the

555

00:23:34,680 --> 00:23:32,710

reasons why Sydney Harbour is so

556

00:23:37,800 --> 00:23:34,690

beautiful and people can see that the

557

00:23:39,420 --> 00:23:37,810

water is often of a very good quality as

558

00:23:41,520 --> 00:23:39,430

you said we can see through the water

559

00:23:44,070 --> 00:23:41,530

yeah quite a few meters here that's not

560

00:23:45,600 --> 00:23:44,080

the case for every history and Sydney

561

00:23:47,790 --> 00:23:45,610

Harbour is blessed by the fact that we

562

00:23:51,150 --> 00:23:47,800

have were a drowned River Valley so we

563

00:23:53,430 --> 00:23:51,160

have rocky walls lining the valley yeah

564

00:23:55,470 --> 00:23:53,440

many many years ago millions and

565

00:23:58,530 --> 00:23:55,480

millions of years ago this was one River

566

00:24:00,750 --> 00:23:58,540

River lake bed essentially and over

567

00:24:02,310 --> 00:24:00,760

millions of years lots of sands and muds

568

00:24:04,620 --> 00:24:02,320

were brought into that lake and

569

00:24:07,140 --> 00:24:04,630

compacted into our sandstone and our mud

570

00:24:08,250 --> 00:24:07,150

stone and our shale and then there was a

571

00:24:10,200 --> 00:24:08,260

great big uplift

572

00:24:12,000 --> 00:24:10,210

about 12 million years ago and the

573

00:24:14,070 --> 00:24:12,010

Paramount of River and all of the other

574

00:24:16,140 --> 00:24:14,080

River and it's tributaries started

575

00:24:20,130 --> 00:24:16,150

flowing through the sandstone itching

576

00:24:22,860 --> 00:24:20,140

really deep areas into that sandstone

577

00:24:24,540 --> 00:24:22,870

then at the end of last glacial we had

578

00:24:28,080 --> 00:24:24,550

the sea levels rise and they came in

579

00:24:30,540 --> 00:24:28,090

from about 30 kilometers out yeah yeah I

580

00:24:32,280 --> 00:24:30,550

was out to the east they came in and

581

00:24:34,740 --> 00:24:32,290

drowned this River Valley and that's why

582

00:24:36,510 --> 00:24:34,750

we have such incredibly complex

583

00:24:39,420 --> 00:24:36,520

structure in Sydney however when you fly

584

00:24:41,970 --> 00:24:39,430

in to Sydney yes absolutely spectacular

585

00:24:43,890 --> 00:24:41,980

the complexity of this harbour lots of

586

00:24:45,600 --> 00:24:43,900

nooks and crannies and what that

587

00:24:47,340 --> 00:24:45,610

provides is a huge range of

588

00:24:49,500 --> 00:24:47,350

environmental conditions so we have very

589

00:24:52,530 --> 00:24:49,510

shallow Shoals beaches that you can walk

590

00:24:54,870 --> 00:24:52,540

across literally down to 45 meters deep

591

00:24:56,550 --> 00:24:54,880

in the 45 meters deep that's quite a bit

592

00:24:58,140 --> 00:24:56,560

impressive it's one it well it's the

593

00:25:00,420 --> 00:24:58,150

only s3 in Australia that doesn't

594

00:25:01,980 --> 00:25:00,430

require maintenance dredging you know

595

00:25:04,350 --> 00:25:01,990

regular maintenance dredging because of

596

00:25:06,480 --> 00:25:04,360

the depths that we have and because the

597

00:25:07,570 --> 00:25:06,490

sediments are not retained as much

598

00:25:11,090 --> 00:25:07,580

they're kind of

599

00:25:13,040 --> 00:25:11,100

into the ocean so we get these flushing

600

00:25:15,260 --> 00:25:13,050

everyday providing lots of fresh clean

601  
00:25:17,270 --> 00:25:15,270  
water into most of the system and then

602  
00:25:19,640 --> 00:25:17,280  
those sandstone walls that are not

603  
00:25:21,500 --> 00:25:19,650  
retaining a lot of the sediments so

604  
00:25:23,950 --> 00:25:21,510  
let's chat about some of the science

605  
00:25:27,950 --> 00:25:23,960  
that goes on here and your role in it

606  
00:25:29,690 --> 00:25:27,960  
it's not just for scientific interest in

607  
00:25:31,970 --> 00:25:29,700  
curiosity unloading this is this

608  
00:25:34,160 --> 00:25:31,980  
actually very important work being

609  
00:25:35,180 --> 00:25:34,170  
undertaken to understand more for the

610  
00:25:38,090 --> 00:25:35,190  
health of our harbors

611  
00:25:40,160 --> 00:25:38,100  
that's right so unless we join together

612  
00:25:42,380 --> 00:25:40,170  
as marine scientists it's very difficult

613  
00:25:45,460 --> 00:25:42,390

for us to tackle location specific

614

00:25:48,620 --> 00:25:45,470

problems elsewhere around the world are

615

00:25:50,830 --> 00:25:48,630

the most stressed of all of our marine

616

00:25:53,150 --> 00:25:50,840

systems and that's because we tend to

617

00:25:55,730 --> 00:25:53,160

congregate around histories we put our

618

00:25:58,250 --> 00:25:55,740

industry we put our houses we use the

619

00:25:59,870 --> 00:25:58,260

water in those areas and so they're

620

00:26:02,000 --> 00:25:59,880

usually subject to lots of different

621

00:26:04,100 --> 00:26:02,010

stressors in Sydney Harbor for example

622

00:26:09,850 --> 00:26:04,110

50 percent of the shoreline has actually

623

00:26:15,170 --> 00:26:12,890

huge that's right and we've gone from 15

624

00:26:16,700 --> 00:26:15,180

islands within the harbor to nine now

625

00:26:19,700 --> 00:26:16,710

it's not that we've dug up the islands

626

00:26:22,390 --> 00:26:19,710

we've actually actually built out the

627

00:26:26,110 --> 00:26:24,100

and that you can hear in the background

628

00:26:27,610 --> 00:26:26,120

is one of this favorite seaplanes that's

629

00:26:30,010 --> 00:26:27,620

danced around sydney

630

00:26:32,800 --> 00:26:30,020

that's right and then on top of all that

631

00:26:34,570 --> 00:26:32,810

we've also used the harbour and all the

632

00:26:37,540 --> 00:26:34,580

way around the world we still can we

633

00:26:41,650 --> 00:26:37,550

continue to use marine areas as waste

634

00:26:43,630 --> 00:26:41,660

dumping grounds so in you know in the 50

635

00:26:46,840 --> 00:26:43,640

60 70 s you'd think twice about jumping

636

00:26:48,670 --> 00:26:46,850

into the harbor for a swim and since we

637

00:26:50,860 --> 00:26:48,680

had the epa in australia so

638

00:26:52,270 --> 00:26:50,870

environmental pollution in authority the

639

00:26:54,520 --> 00:26:52,280

water quality has improved massively

640

00:26:57,040 --> 00:26:54,530

because it's now licensed what you can

641

00:26:59,500 --> 00:26:57,050

release well we look behind us here to

642

00:27:00,730 --> 00:26:59,510

this lovely beach which is not really

643

00:27:02,560 --> 00:27:00,740

being used today because there's a bit

644

00:27:04,360 --> 00:27:02,570

early in the season i imagine in the

645

00:27:06,970 --> 00:27:04,370

summertime it's packed and people

646

00:27:08,950 --> 00:27:06,980

happily swimming absolutely and they're

647

00:27:11,800 --> 00:27:08,960

swimming quite safely as long as it

648

00:27:13,270 --> 00:27:11,810

hasn't rained recently but some of the

649

00:27:15,880 --> 00:27:13,280

big research questions that were

650

00:27:18,460 --> 00:27:15,890

tackling for example are relevant

651  
00:27:21,220 --> 00:27:18,470  
globally the results will be useful to

652  
00:27:23,440 --> 00:27:21,230  
parameters water quality models for s

653  
00:27:25,600 --> 00:27:23,450  
trees around the globe but they're hot

654  
00:27:27,670 --> 00:27:25,610  
topics here as well so we're able to get

655  
00:27:29,500 --> 00:27:27,680  
teams of research together we get

656  
00:27:32,080 --> 00:27:29,510  
chemists analytical chemists we get

657  
00:27:33,940 --> 00:27:32,090  
microbial ecologists we get macro formal

658  
00:27:36,280 --> 00:27:33,950  
ecologists we get hydrologists and

659  
00:27:38,170 --> 00:27:36,290  
physicists and geomorphologists team

660  
00:27:39,850 --> 00:27:38,180  
them up together you really need a huge

661  
00:27:41,320 --> 00:27:39,860  
range of skills it almost sounds like a

662  
00:27:50,770 --> 00:27:41,330  
song you could put all those words

663  
00:27:54,540 --> 00:27:50,780

together sometimes I feel like I should

664

00:27:57,520 --> 00:27:54,550

be so we conduct these people together

665

00:27:58,810 --> 00:27:57,530

into a lovely Orchestra and so the

666

00:28:00,340 --> 00:27:58,820

Sydney Institute of Marine Science is

667

00:28:01,810 --> 00:28:00,350

built for that purpose it's built to

668

00:28:03,880 --> 00:28:01,820

bring people together from the different

669

00:28:05,800 --> 00:28:03,890

universities from the different research

670

00:28:07,870 --> 00:28:05,810

organizations from the museum from the

671

00:28:10,090 --> 00:28:07,880

government yeah and it's when you get

672

00:28:11,770 --> 00:28:10,100

these nice synthesis of people and these

673

00:28:14,080 --> 00:28:11,780

matching of skills that you can tackle

674

00:28:15,910 --> 00:28:14,090

environmental problems because you

675

00:28:18,520 --> 00:28:15,920

actually need every one of those skills

676

00:28:20,050 --> 00:28:18,530

one big issue is how does the

677

00:28:23,260 --> 00:28:20,060

contamination in the sediments of the

678

00:28:25,690 --> 00:28:23,270

harbour affect nitrogen cycling and the

679

00:28:27,730 --> 00:28:25,700

water quality above your and to do that

680

00:28:29,680 --> 00:28:27,740

you need every one of those people now

681

00:28:30,880 --> 00:28:29,690

what I'll do now is come with me and

682

00:28:34,540 --> 00:28:30,890

we'll just walk around

683

00:28:36,790 --> 00:28:34,550

appear here and I'd love you to take me

684

00:28:39,100 --> 00:28:36,800

on a little tour of the aquarium

685

00:28:40,630 --> 00:28:39,110

building I'd really like to show you the

686

00:28:46,620 --> 00:28:40,640

aquarium there's so much going on here

687

00:28:49,510 --> 00:28:46,630

and now we've come in here to a

688

00:28:50,110 --> 00:28:49,520

wonderful building down by the water

689

00:28:58,210 --> 00:28:50,120

here

690

00:29:01,210 --> 00:28:58,220

urchins I think this is our wonderful

691

00:29:02,560 --> 00:29:01,220

new aquarium building we have lots of

692

00:29:04,150 --> 00:29:02,570

different spaces lots of different

693

00:29:06,100 --> 00:29:04,160

experiments being run simultaneously

694

00:29:08,080 --> 00:29:06,110

because there's so many different tugs

695

00:29:10,690 --> 00:29:08,090

and we can also control the water

696

00:29:12,130 --> 00:29:10,700

temperature we can control the carbon

697

00:29:14,640 --> 00:29:12,140

dioxide levels in the water we can do

698

00:29:16,390 --> 00:29:14,650

all sorts of manipulative experiments

699

00:29:18,430 --> 00:29:16,400

fascinating now let's have a look at

700

00:29:20,200 --> 00:29:18,440

these tubs along here for example they

701  
00:29:22,270 --> 00:29:20,210  
don't look like there's too much going

702  
00:29:25,810 --> 00:29:22,280  
on on in this these are really just

703  
00:29:27,790 --> 00:29:25,820  
holding this house yes that's right this

704  
00:29:30,610 --> 00:29:27,800  
is my colonia which is one of our local

705  
00:29:32,200 --> 00:29:30,620  
helps and it's some sea urchins that are

706  
00:29:33,970 --> 00:29:32,210  
munching down on that so these are just

707  
00:29:35,890 --> 00:29:33,980  
holding tanks until the experiments are

708  
00:29:37,480 --> 00:29:35,900  
ready to start and you ER

709  
00:29:39,700 --> 00:29:37,490  
as we walked in you were telling me

710  
00:29:43,030 --> 00:29:39,710  
there's another room over there which is

711  
00:29:45,790 --> 00:29:43,040  
sealed so you can actually have very

712  
00:29:48,910 --> 00:29:45,800  
nasty diseases in the experiment that's

713  
00:29:50,920 --> 00:29:48,920

right so that's a pc2 aquarium facility

714

00:29:53,890 --> 00:29:50,930

and we can do all sorts of manipulations

715

00:29:56,350 --> 00:29:53,900

in there as well as work with organisms

716

00:29:58,660 --> 00:29:56,360

that would otherwise be dangerous to let

717

00:30:00,460 --> 00:29:58,670

out in the wild so we know that anything

718

00:30:03,430 --> 00:30:00,470

in there is not going to get out alive

719

00:30:06,040 --> 00:30:03,440

so you can do experiments with disease

720

00:30:07,840 --> 00:30:06,050

resistance for example or with really

721

00:30:10,990 --> 00:30:07,850

look you you're like that's a hard word

722

00:30:13,270 --> 00:30:11,000

to take organisms that might otherwise

723

00:30:15,220 --> 00:30:13,280

be quite dangerous to have in the

724

00:30:17,010 --> 00:30:15,230

outside world completely sealed

725

00:30:18,560 --> 00:30:17,020

everything that comes out of that is

726

00:30:20,659 --> 00:30:18,570

totally

727

00:30:24,430 --> 00:30:20,669

like Zach but one gets out there so

728

00:30:31,210 --> 00:30:29,590

just walk around here and there are many

729

00:30:35,350 --> 00:30:31,220

rows of these tanks all got a little

730

00:30:36,190 --> 00:30:35,360

buckets here and hello hello and what's

731

00:30:38,500 --> 00:30:36,200

your job here

732

00:30:40,840 --> 00:30:38,510

I'm just currently building my

733

00:30:43,020 --> 00:30:40,850

experiment which I'll be studying next

734

00:30:46,660 --> 00:30:43,030

week hopefully if all goes to plan

735

00:30:48,880 --> 00:30:46,670

somebody's sitting up pipe ads above my

736

00:30:51,520 --> 00:30:48,890

tank to film my animals and how they

737

00:30:53,530 --> 00:30:51,530

move around and that's interesting I can

738

00:30:56,170 --> 00:30:53,540

see it's just in the process of being

739

00:30:58,330 --> 00:30:56,180

set up so you're gonna have iPads face

740

00:31:02,290 --> 00:30:58,340

facing down or the camera facing down to

741

00:31:04,770 --> 00:31:02,300

the apps on iPads that will actually

742

00:31:07,120 --> 00:31:04,780

track animals so it's a cheap way of

743

00:31:08,760 --> 00:31:07,130

kind of filming them without having to

744

00:31:10,660 --> 00:31:08,770

be there and spend a lot of time

745

00:31:12,820 --> 00:31:10,670

constantly looking at them or taking

746

00:31:14,440 --> 00:31:12,830

photos of him how good is that so you

747

00:31:17,230 --> 00:31:14,450

could have just plug them in somewhere

748

00:31:19,810 --> 00:31:17,240

they just let them run yeah exactly that

749

00:31:21,520 --> 00:31:19,820

that's fascinating well I wish you every

750

00:31:23,920 --> 00:31:21,530

success what an interesting place it is

751  
00:31:26,280 --> 00:31:23,930  
you have to do your research I know it's

752  
00:31:30,670 --> 00:31:26,290  
been it's great using these facilities

753  
00:31:35,620 --> 00:31:30,680  
thank you folks there you go there you

754  
00:31:37,870 --> 00:31:35,630  
are another piece tablet technology

755  
00:31:39,760 --> 00:31:37,880  
that's right there's all sorts of new

756  
00:31:41,920 --> 00:31:39,770  
things that are being done with GoPro

757  
00:31:44,410 --> 00:31:41,930  
cameras and iPads and we're getting a

758  
00:31:45,760 --> 00:31:44,420  
lot more visual representations of what

759  
00:31:47,740 --> 00:31:45,770  
happens under the water not only in

760  
00:31:49,360 --> 00:31:47,750  
laboratories like this and aquaria but

761  
00:31:51,400 --> 00:31:49,370  
also out in the real world so a lot of

762  
00:31:54,460 --> 00:31:51,410  
use of GoPro cameras now they are

763  
00:31:56,380 --> 00:31:54,470

underwater cameras then they pick up a

764

00:31:58,720 --> 00:31:56,390

lot of light so that we can get lots of

765

00:32:00,850 --> 00:31:58,730

visual images here is a try and start to

766

00:32:03,130 --> 00:32:00,860

understand animal behavior under the

767

00:32:05,080 --> 00:32:03,140

water something that is really difficult

768

00:32:07,450 --> 00:32:05,090

to study has been in the past due to

769

00:32:10,420 --> 00:32:07,460

limited scuba time and now we're really

770

00:32:11,560 --> 00:32:10,430

getting a lot more visual representation

771

00:32:13,450 --> 00:32:11,570

and it's getting cheaper to do

772

00:32:15,490 --> 00:32:13,460

absolutely and so we have a lot of

773

00:32:17,770 --> 00:32:15,500

student projects and they're spending a

774

00:32:19,870 --> 00:32:17,780

lot of time setting up the cameras but

775

00:32:22,000 --> 00:32:19,880

then dealing with it back in the lab

776

00:32:26,100 --> 00:32:22,010

just watching hours and hours an hour to

777

00:32:30,779 --> 00:32:28,950

looking peering through another window

778

00:32:32,549 --> 00:32:30,789

here into a little room what what's this

779

00:32:34,380 --> 00:32:32,559

happening in here so what we've done is

780

00:32:36,750 --> 00:32:34,390

we've created controlled temperature

781

00:32:39,120 --> 00:32:36,760

aquarium facilities which means that we

782

00:32:41,100 --> 00:32:39,130

can set the temperature of this room and

783

00:32:43,560 --> 00:32:41,110

there's three of these rooms we might

784

00:32:45,930 --> 00:32:43,570

set one at 18 we might set one at 22 and

785

00:32:47,880 --> 00:32:45,940

light set one at 26 and that will give

786

00:32:48,930 --> 00:32:47,890

different environmental conditions for

787

00:32:50,789 --> 00:32:48,940

the animals that we're working with

788

00:32:52,350 --> 00:32:50,799

we're particularly interested in climate

789

00:32:54,690 --> 00:32:52,360

change because New South Wales and

790

00:32:57,419 --> 00:32:54,700

Sydney Harbor is a it's a climate change

791

00:32:58,740 --> 00:32:57,429

hotspot with regards to temperature and

792

00:33:00,509 --> 00:32:58,750

that's because the East Australian

793

00:33:02,789 --> 00:33:00,519

current is strengthening we know it's

794

00:33:04,769 --> 00:33:02,799

strengthening and it pumps down warm

795

00:33:06,960 --> 00:33:04,779

water from the tropics straight down the

796

00:33:09,269 --> 00:33:06,970

east coast and this particular point

797

00:33:11,490 --> 00:33:09,279

here is where we're seeing the largest

798

00:33:14,100 --> 00:33:11,500

changes in the temperature so this area

799

00:33:15,779 --> 00:33:14,110

two or three degrees really rapid

800

00:33:17,700 --> 00:33:15,789

changes in temperatures simply because

801  
00:33:20,490 --> 00:33:17,710  
that East Australian current is coming

802  
00:33:22,620 --> 00:33:20,500  
down further really before it spins off

803  
00:33:24,779 --> 00:33:22,630  
and peels off from the coaster so

804  
00:33:26,250 --> 00:33:24,789  
particularly interested in the tropical

805  
00:33:27,810 --> 00:33:26,260  
species that are coming down a lot of

806  
00:33:30,029 --> 00:33:27,820  
tropical fish species have brought it

807  
00:33:31,500 --> 00:33:30,039  
brought down just like a Nemo they're

808  
00:33:33,149 --> 00:33:31,510  
actually brought down on the Eastern

809  
00:33:36,180 --> 00:33:33,159  
current yep and they come into the

810  
00:33:38,129 --> 00:33:36,190  
harbor every year they survive the

811  
00:33:40,470 --> 00:33:38,139  
summer but up until now most of them

812  
00:33:42,060 --> 00:33:40,480  
have not been able to overwinter so they

813  
00:33:45,000 --> 00:33:42,070

won't survive through the winter so they

814

00:33:47,129 --> 00:33:45,010

don't establish populations but we're

815

00:33:49,049 --> 00:33:47,139

just getting to the point where the mean

816

00:33:52,080 --> 00:33:49,059

minimum water temperature is

817

00:33:55,230 --> 00:33:52,090

sufficiently high that we will start to

818

00:33:58,049 --> 00:33:55,240

see them overwintering and then change

819

00:34:00,060 --> 00:33:58,059

things dramatically had I guess total

820

00:34:02,399 --> 00:34:00,070

change in the harbour ecosystem we call

821

00:34:05,399 --> 00:34:02,409

it tropical ization so we're potentially

822

00:34:07,860 --> 00:34:05,409

seeing a huge suite of new herbivorous

823

00:34:10,020 --> 00:34:07,870

largely herbivorous fish species coming

824

00:34:12,720 --> 00:34:10,030

into the harbor so we expecting major

825

00:34:16,379 --> 00:34:12,730

ecosystem change over the next 10 20

826

00:34:19,109 --> 00:34:16,389

years I have no idea yeah and it's not

827

00:34:21,270 --> 00:34:19,119

something that you can stop something

828

00:34:23,419 --> 00:34:21,280

that you can put a grid on the front of

829

00:34:24,980 --> 00:34:23,429

the harbor and not let them in it

830

00:34:27,139 --> 00:34:24,990

something that we have to work with and

831

00:34:29,089 --> 00:34:27,149

try and reduce the other stressors in

832

00:34:31,069 --> 00:34:29,099

the system so that the system is

833

00:34:34,490 --> 00:34:31,079

resilient enough to deal with this

834

00:34:40,700 --> 00:34:34,500

massive ecosystem change good things you

835

00:34:45,289 --> 00:34:40,710

learned working on smaller organisms

836

00:34:46,940 --> 00:34:45,299

here so urgent and small fish a lot a

837

00:34:49,879 --> 00:34:46,950

lot of different invertebrates and a lot

838

00:34:51,889 --> 00:34:49,889

of algae but we do have some larger

839

00:34:59,410 --> 00:34:51,899

tanks here with all yes just come in to

840

00:35:02,510 --> 00:34:59,420

another room here with oh it's a YUM

841

00:35:06,049 --> 00:35:02,520

it's about a meter and a half across

842

00:35:09,529 --> 00:35:06,059

it's a very big round sort of tank made

843

00:35:10,940 --> 00:35:09,539

out of fiberglass I guess so we do a lot

844

00:35:12,920 --> 00:35:10,950

of research in conjunction with

845

00:35:14,720 --> 00:35:12,930

fisheries which is a New South Wales

846

00:35:16,250 --> 00:35:14,730

Government Department and they're

847

00:35:18,010 --> 00:35:16,260

particularly interested in some of the

848

00:35:21,170 --> 00:35:18,020

fish that are important recreational

849

00:35:23,510 --> 00:35:21,180

fish so in the past these tanks have

850

00:35:25,700 --> 00:35:23,520

been used to hold mulloway for mulloway

851  
00:35:27,529 --> 00:35:25,710  
stocking programs so they might grow up

852  
00:35:30,380 --> 00:35:27,539  
the juvenile mile away and then release

853  
00:35:32,690 --> 00:35:30,390  
them into estuaries to actually try it

854  
00:35:35,079 --> 00:35:32,700  
attempt to increase the population on

855  
00:35:37,309 --> 00:35:35,089  
those recreationally important fish

856  
00:35:40,609 --> 00:35:37,319  
there's all sorts of engines and pumps

857  
00:35:42,170 --> 00:35:40,619  
and filters and I think that one's you

858  
00:35:43,370 --> 00:35:42,180  
know is just behind me it's just going

859  
00:35:45,769 --> 00:35:43,380  
off

860  
00:35:48,019 --> 00:35:45,779  
soundscape here's one let's go we have a

861  
00:35:51,890 --> 00:35:48,029  
look down the pier let's walk and stroll

862  
00:35:53,960 --> 00:35:51,900  
out of here well that was quite an

863  
00:35:54,980 --> 00:35:53,970

experience to be in the aquarium there

864

00:35:59,569 --> 00:35:54,990

now we've come back out to this

865

00:36:01,460 --> 00:35:59,579

wonderful pier now you you don't keep

866

00:36:03,680 --> 00:36:01,470

your light under a bushel how can people

867

00:36:05,599 --> 00:36:03,690

find out more about the fascinating oh

868

00:36:07,249 --> 00:36:05,609

hello what's this we're being invaded by

869

00:36:09,829 --> 00:36:07,259

a helicopter their ghost must be channel

870

00:36:13,039 --> 00:36:09,839

7 news I think how can people find out

871

00:36:15,470 --> 00:36:13,049

more about what what it's all about

872

00:36:17,720 --> 00:36:15,480

well a big part of our Sydney Harbor

873

00:36:19,309 --> 00:36:17,730

research program is outreach and we're

874

00:36:21,430 --> 00:36:19,319

trying to reach out to a huge range of

875

00:36:23,990 --> 00:36:21,440

audiences but for starters if you're

876

00:36:25,910 --> 00:36:24,000

anywhere in the world you can just hop

877

00:36:27,769 --> 00:36:25,920

onto our website so the Sydney Harbour

878

00:36:29,120 --> 00:36:27,779

Research Program website and you can see

879

00:36:30,470 --> 00:36:29,130

all the different projects are up -

880

00:36:32,120 --> 00:36:30,480

there's lots of information about the

881

00:36:34,279 --> 00:36:32,130

harbour as well if you want to find out

882

00:36:36,410 --> 00:36:34,289

and lots of contact details so that's

883

00:36:38,029 --> 00:36:36,420

your first point of call and then if

884

00:36:39,740 --> 00:36:38,039

you're in the Sydney region where we're

885

00:36:41,900 --> 00:36:39,750

running loads of different programs you

886

00:36:44,089 --> 00:36:41,910

can get involved do lots of Education

887

00:36:46,400 --> 00:36:44,099

and lots of public talks so there's a

888

00:36:48,950 --> 00:36:46,410

good you have a good policy of for

889

00:36:51,109 --> 00:36:48,960

example involving schools school groups

890

00:36:53,210 --> 00:36:51,119

that's right so we've developed specific

891

00:36:55,309 --> 00:36:53,220

programs that are fitting in with the

892

00:36:58,039 --> 00:36:55,319

curriculum and that are specifically

893

00:37:00,559 --> 00:36:58,049

dealing with issues in Sydney Harbor and

894

00:37:02,480 --> 00:37:00,569

we can go out there and deliver them or

895

00:37:04,339 --> 00:37:02,490

we can get student groups in which is

896

00:37:06,140 --> 00:37:04,349

what we do quite a lot and they will

897

00:37:08,870 --> 00:37:06,150

actually do a part of their course here

898

00:37:10,370 --> 00:37:08,880

wow that's pretty impressive and I love

899

00:37:12,019 --> 00:37:10,380

outreach I think that's that's so

900

00:37:13,819 --> 00:37:12,029

important because you get people very

901  
00:37:17,690 --> 00:37:13,829  
enthused and interested in it what's the

902  
00:37:20,630 --> 00:37:17,700  
URL for that website harbour program dot

903  
00:37:25,220 --> 00:37:20,640  
Sims org a you know of course we spell

904  
00:37:30,249 --> 00:37:25,230  
harbour har B oh you are and program P

905  
00:37:36,289 --> 00:37:32,210  
international about that so harbour

906  
00:37:38,089 --> 00:37:36,299  
program dr. Sims org dot au and if

907  
00:37:39,980 --> 00:37:38,099  
there's one last take-home message you'd

908  
00:37:41,539 --> 00:37:39,990  
have for the people of Sydney

909  
00:37:45,499 --> 00:37:41,549  
regarding their harbour what would that

910  
00:37:47,539 --> 00:37:45,509  
be really the take-home message is don't

911  
00:37:49,789 --> 00:37:47,549  
just look on the surface and enjoy the

912  
00:37:51,859 --> 00:37:49,799  
sparkling waters really look underneath

913  
00:37:53,990 --> 00:37:51,869

so if you get an opportunity get that

914

00:37:54,810 --> 00:37:54,000

mask and snorkel on go for a dip see

915

00:37:56,220 --> 00:37:54,820

what's happening

916

00:37:58,320 --> 00:37:56,230

underneath so that you can start to

917

00:37:59,730 --> 00:37:58,330

appreciate and empathize with all the

918

00:38:02,580 --> 00:37:59,740

animals that are trying to share this

919

00:38:25,170 --> 00:38:02,590

lovely place with us good message dr.

920

00:38:27,090 --> 00:38:25,180

Emma Johnson thank you very much hey

921

00:38:29,070 --> 00:38:27,100

this is Jane Avila from the skeptics

922

00:38:30,240 --> 00:38:29,080

guide to the universe podcast did you

923

00:38:32,100 --> 00:38:30,250

know that there are thousands of

924

00:38:34,620 --> 00:38:32,110

skeptical reports interviews and

925

00:38:35,340 --> 00:38:34,630

investigations going back to 1981 free

926

00:38:39,780 --> 00:38:35,350

to download

927

00:38:41,310 --> 00:38:39,790

just visit WWF Dexcom a you click the

928

00:38:43,260 --> 00:38:41,320

publication's link and enjoy almost

929

00:38:45,420 --> 00:38:43,270

every back issue of the skeptic the

930

00:38:47,310 --> 00:38:45,430

Journal from Australian skeptics you can

931

00:38:49,470 --> 00:38:47,320

also subscribe online and get the latest

932

00:38:51,920 --> 00:38:49,480

digital or hard copy of this the world's

933

00:38:55,350 --> 00:38:51,930

second oldest skeptical magazine that's

934

00:39:06,480 --> 00:38:55,360

wws kept XCOM a you or just google

935

00:39:09,540 --> 00:39:06,490

Australian skeptics this week in science

936

00:39:11,820 --> 00:39:09,550

we saw musical treadmills restoring the

937

00:39:23,520 --> 00:39:11,830

sense of touch and the inaugural world

938

00:39:28,690 --> 00:39:26,350

men all around the world put their balls

939

00:39:31,960 --> 00:39:28,700

on the line on Friday the 18th of

940

00:39:33,940 --> 00:39:31,970

October world vasectomy day the goal is

941

00:39:36,580 --> 00:39:33,950

to start a global conversation about the

942

00:39:38,890 --> 00:39:36,590

social cultural and ethical issues of an

943

00:39:40,780 --> 00:39:38,900

ever-increasing population and the

944

00:39:43,360 --> 00:39:40,790

effect it has on the planets of finite

945

00:39:45,220 --> 00:39:43,370

resources this world first vasectomy

946

00:39:48,340 --> 00:39:45,230

Athan was inspired by documentary

947

00:39:49,000 --> 00:39:48,350

filmmaker Jonathan stack whose film the

948

00:39:51,850 --> 00:39:49,010

vasectomy

949

00:39:54,700 --> 00:39:51,860

premieres this week you can also follow

950

00:39:58,960 --> 00:39:54,710

the action snip by snip on the are isles

951  
00:40:01,300 --> 00:39:58,970  
website the sense of touch has been

952  
00:40:03,940 --> 00:40:01,310  
replicated using electrical signals in

953  
00:40:05,230 --> 00:40:03,950  
the brain using monkeys scientists

954  
00:40:07,470 --> 00:40:05,240  
stimulated the part of the brain

955  
00:40:09,880 --> 00:40:07,480  
responsible for the sensation of touch

956  
00:40:11,800 --> 00:40:09,890  
conveying information about how much

957  
00:40:14,110 --> 00:40:11,810  
pressure and what part of the hand it

958  
00:40:16,000 --> 00:40:14,120  
touched the trained monkeys responded

959  
00:40:18,700 --> 00:40:16,010  
just as if an object had touched their

960  
00:40:20,680 --> 00:40:18,710  
real hand this is hoped to pave the way

961  
00:40:24,960 --> 00:40:20,690  
for the restoration of a sense of touch

962  
00:40:27,340 --> 00:40:24,970  
for people with prosthetic limbs

963  
00:40:29,640 --> 00:40:27,350

rainbowfish are able to recognize

964

00:40:32,380 --> 00:40:29,650

potential threats while still an embryo

965

00:40:34,960 --> 00:40:32,390

taking vitamin D supplements does not

966

00:40:37,930 --> 00:40:34,970

increase bone mineral density nor help

967

00:40:40,060 --> 00:40:37,940

prevent osteoporosis exercise treadmills

968

00:40:42,580 --> 00:40:40,070

which generate music as a result of a

969

00:40:44,770 --> 00:40:42,590

person's exertions leaves that person

970

00:40:47,530 --> 00:40:44,780

feeling less exhausted afterwards and

971

00:40:49,660 --> 00:40:47,540

repeatedly viewing images of food may

972

00:40:53,670 --> 00:40:49,670

actually decrease your appetite and

973

00:40:55,750 --> 00:40:53,680

enjoyment of eating that particular food

974

00:40:57,850 --> 00:40:55,760

don't forget to check out world

975

00:40:59,620 --> 00:40:57,860

vasectomy day on the our isles website

976  
00:41:02,020 --> 00:40:59,630  
and while you're there why not subscribe

977  
00:41:04,150 --> 00:41:02,030  
for future episodes of a week in science

978  
00:41:15,230 --> 00:41:04,160  
that's it for this a week in science

979  
00:41:21,030 --> 00:41:18,570  
hi this is Carrie papi I am Ross

980  
00:41:25,290 --> 00:41:21,040  
Fletcher okay Ross hey we're from a

981  
00:41:26,670 --> 00:41:25,300  
podcast called Carrie we find out what

982  
00:41:28,080 --> 00:41:26,680  
happens when you show up and ask

983  
00:41:30,300 --> 00:41:28,090  
questions we've hung out with the

984  
00:41:32,880 --> 00:41:30,310  
caballes the Mormons we've gone and

985  
00:41:35,310 --> 00:41:32,890  
gotten ear candle gone to the Sikhs we

986  
00:41:37,110 --> 00:41:35,320  
show up so you don't have to so find out

987  
00:41:38,880 --> 00:41:37,120  
where we're going next we'll even have

988  
00:41:41,550 --> 00:41:38,890

special episodes where we have famous

989

00:41:43,470 --> 00:41:41,560

guests like Brian Dalton from mr. deity

990

00:41:45,510 --> 00:41:43,480

you heard that awesome theme music he

991

00:41:50,070 --> 00:41:45,520

wrote that you should come visit us at

992

00:41:52,860 --> 00:41:50,080

Ono podcast.com or facebook.com slash on

993

00:41:56,940 --> 00:41:52,870

rack what the hell's honor a cross o in

994

00:42:02,640 --> 00:41:56,950

RAC Oh Ross and Carrie that's our show

995

00:42:10,940 --> 00:42:07,630

here's Maynard spooky action at a

996

00:42:14,700 --> 00:42:13,350

well people is rushing and hushing and

997

00:42:16,770 --> 00:42:14,710

I'm standing here in my elasticized

998

00:42:19,260 --> 00:42:16,780

shorts as the excitement of skeptic camp

999

00:42:20,460 --> 00:42:19,270

washes over all of us Vanessa how you

1000

00:42:22,140 --> 00:42:20,470

I'm well thank you

1001  
00:42:24,420 --> 00:42:22,150  
no I believe for fun you'd like to do a

1002  
00:42:25,560 --> 00:42:24,430  
sort of a fake PhD which you can present

1003  
00:42:28,260 --> 00:42:25,570  
at skeptic camp that's what you'd like

1004  
00:42:30,330 --> 00:42:28,270  
to do because that was a history of the

1005  
00:42:32,630 --> 00:42:30,340  
future you just gave us yeah it was it's

1006  
00:42:36,120 --> 00:42:32,640  
a master's degree so it's like a mini

1007  
00:42:37,980 --> 00:42:36,130  
PhD I suppose you could say no I hope

1008  
00:42:40,020 --> 00:42:37,990  
you're the hardest engine for that it's

1009  
00:42:42,390 --> 00:42:40,030  
currently in the process of peer reviews

1010  
00:42:44,100 --> 00:42:42,400  
so giving that talk whereas my little

1011  
00:42:45,690 --> 00:42:44,110  
peer review process personally just

1012  
00:42:47,370 --> 00:42:45,700  
seeing how people received it I've never

1013  
00:42:48,960 --> 00:42:47,380

spoken about it before oh and what

1014

00:42:51,060 --> 00:42:48,970

degree are you actually doing it was a

1015

00:42:53,040 --> 00:42:51,070

masters of science communication at Anu

1016

00:42:54,720 --> 00:42:53,050

so it was half research so I did a

1017

00:42:56,190 --> 00:42:54,730

research project looking at the history

1018

00:43:00,090 --> 00:42:56,200

of the future and looking at people's

1019

00:43:02,220 --> 00:43:00,100

public public images of 2050 so with

1020

00:43:03,870 --> 00:43:02,230

that degree a good job would be you

1021

00:43:05,520 --> 00:43:03,880

would communicate the latest research to

1022

00:43:06,840 --> 00:43:05,530

the CSIRO to the public and not get a

1023

00:43:08,160 --> 00:43:06,850

confused that'd be one of the things you

1024

00:43:10,230 --> 00:43:08,170

would do with that that's a possibility

1025

00:43:12,180 --> 00:43:10,240

yes we would write a really well good

1026  
00:43:14,849 --> 00:43:12,190  
well about book tour would sell millions

1027  
00:43:18,030 --> 00:43:14,859  
of copies I hoped and make millions as

1028  
00:43:19,140 --> 00:43:18,040  
an author yeah and now with that history

1029  
00:43:21,330 --> 00:43:19,150  
in the future what do you think is the

1030  
00:43:23,190 --> 00:43:21,340  
most consistent thing we can learn from

1031  
00:43:25,530 --> 00:43:23,200  
people to try to predict the future what

1032  
00:43:27,090 --> 00:43:25,540  
about as it Alvin Toffler future shop

1033  
00:43:29,310 --> 00:43:27,100  
with did it have anything in it that we

1034  
00:43:31,080 --> 00:43:29,320  
can is still relevant I think having a

1035  
00:43:33,150 --> 00:43:31,090  
look at futures literature say over the

1036  
00:43:34,800 --> 00:43:33,160  
past 100 years there's a couple of

1037  
00:43:37,380 --> 00:43:34,810  
things we can learn one is that our

1038  
00:43:39,060 --> 00:43:37,390

thoughts of the future are really placed

1039

00:43:40,380 --> 00:43:39,070

in tropes at the present so we have a

1040

00:43:43,080 --> 00:43:40,390

look at things that are happening at

1041

00:43:46,560 --> 00:43:43,090

this point in time and we say it's going

1042

00:43:48,060 --> 00:43:46,570

to be more advanced in in this way so we

1043

00:43:50,910 --> 00:43:48,070

might have a look at say at the end of

1044

00:43:52,590 --> 00:43:50,920

the space race say oh by the year 1995

1045

00:43:54,240 --> 00:43:52,600

we're gonna have people living on

1046

00:43:56,190 --> 00:43:54,250

another planet because that that's

1047

00:43:58,109 --> 00:43:56,200

something that just grows as an

1048

00:43:59,970 --> 00:43:58,119

extension of the present right the other

1049

00:44:02,700 --> 00:43:59,980

thing that we've learned looking at

1050

00:44:05,220 --> 00:44:02,710

futures of past 100 years is that people

1051  
00:44:09,030 --> 00:44:05,230  
always have ideas of huge technological

1052  
00:44:10,200 --> 00:44:09,040  
progress and place science as a magical

1053  
00:44:11,790 --> 00:44:10,210  
thing that can solve all of our problems

1054  
00:44:13,500 --> 00:44:11,800  
yes because I was bringing up a cold

1055  
00:44:14,580 --> 00:44:13,510  
fusion zero-point energy something like

1056  
00:44:16,380 --> 00:44:14,590  
if you had like something new you're

1057  
00:44:18,289 --> 00:44:16,390  
able to get lots of energy from that

1058  
00:44:20,269 --> 00:44:18,299  
didn't give emissions and did

1059  
00:44:22,789 --> 00:44:20,279  
pay to heat so the plant didn't warm up

1060  
00:44:24,289 --> 00:44:22,799  
to the temperature of Venus you would

1061  
00:44:26,809 --> 00:44:24,299  
have a completely transformed society

1062  
00:44:29,569 --> 00:44:26,819  
you would I hate to think of our planet

1063  
00:44:32,059 --> 00:44:29,579

at 480 odd degrees which is the

1064

00:44:33,589 --> 00:44:32,069

temperature well if everyone's using

1065

00:44:35,120 --> 00:44:33,599

energy it's got a decay to something and

1066

00:44:37,130 --> 00:44:35,130

even if you has it's got to do something

1067

00:44:38,509 --> 00:44:37,140

so you know everyone does seem to think

1068

00:44:39,949 --> 00:44:38,519

we can keep building and building but

1069

00:44:41,809 --> 00:44:39,959

I'm big Smith about this you just can't

1070

00:44:43,189 --> 00:44:41,819

keep building and building we need to

1071

00:44:45,439 --> 00:44:43,199

change and change it is an always

1072

00:44:47,839 --> 00:44:45,449

building sometimes it's creating

1073

00:44:50,209 --> 00:44:47,849

different types of infrastructure or

1074

00:44:51,620 --> 00:44:50,219

doing things in different ways what

1075

00:44:53,569 --> 00:44:51,630

about big developments like people

1076  
00:44:55,339 --> 00:44:53,579  
willingly giving away their privacy with

1077  
00:44:57,109 --> 00:44:55,349  
like social media and across the

1078  
00:44:58,939 --> 00:44:57,119  
government getting our privacy from us

1079  
00:45:00,140 --> 00:44:58,949  
in new ways like that 10 years ago you

1080  
00:45:02,569 --> 00:45:00,150  
probably wouldn't even put that in a

1081  
00:45:03,799 --> 00:45:02,579  
question here would you probably not and

1082  
00:45:05,269 --> 00:45:03,809  
I think a lot of people are concerned

1083  
00:45:06,769 --> 00:45:05,279  
about that's something that people talk

1084  
00:45:09,559 --> 00:45:06,779  
about a lot in the future is

1085  
00:45:11,359 --> 00:45:09,569  
identification and say if we had a chip

1086  
00:45:13,189 --> 00:45:11,369  
or a microchip that we would put in all

1087  
00:45:15,169 --> 00:45:13,199  
of us that would have our health records

1088  
00:45:17,179 --> 00:45:15,179

on it for example in ways I think that

1089

00:45:18,949 --> 00:45:17,189

could be a good thing say you were in an

1090

00:45:20,809 --> 00:45:18,959

accident and ambulance could come along

1091

00:45:23,120 --> 00:45:20,819

and with some kind of reader just read

1092

00:45:24,799 --> 00:45:23,130

your chip and find out who you were and

1093

00:45:26,449 --> 00:45:24,809

what your medical history was there are

1094

00:45:28,969 --> 00:45:26,459

benefits to that but it's also a huge

1095

00:45:30,410 --> 00:45:28,979

invasion of privacy because I'm sure

1096

00:45:32,029 --> 00:45:30,420

that people could create technology that

1097

00:45:34,069 --> 00:45:32,039

could read everyone's chips on the same

1098

00:45:35,839 --> 00:45:34,079

buses them what group are the most

1099

00:45:38,179 --> 00:45:35,849

skeptical about the future from your

1100

00:45:39,829 --> 00:45:38,189

studies the group that is the most

1101

00:45:42,529 --> 00:45:39,839

skeptical of those who were the most

1102

00:45:44,779 --> 00:45:42,539

resistant to change in previous studies

1103

00:45:47,299 --> 00:45:44,789

people who live in more developed

1104

00:45:50,890 --> 00:45:47,309

countries are more accepting of the

1105

00:45:54,410 --> 00:45:50,900

future and more I guess have a better

1106

00:45:58,160 --> 00:45:54,420

capability to predict future trends so

1107

00:46:01,039 --> 00:45:58,170

people that would would be less willing

1108

00:46:03,199 --> 00:46:01,049

to change often those who live on what

1109

00:46:04,849 --> 00:46:03,209

is sometimes defined as the peripheries

1110

00:46:07,180 --> 00:46:04,859

of society so I guess people who don't

1111

00:46:09,070 --> 00:46:07,190

have a high level of education

1112

00:46:11,230 --> 00:46:09,080

or who live there that you know city

1113

00:46:14,200 --> 00:46:11,240

fringe areas I don't think that's really

1114

00:46:17,050 --> 00:46:14,210

a definition anymore but in studies in

1115

00:46:18,670 --> 00:46:17,060

history it has been ok rodeo well look

1116

00:46:20,020 --> 00:46:18,680

I've got appalling nail so I got to

1117

00:46:21,400 --> 00:46:20,030

admit on the close-up shots you had

1118

00:46:22,960 --> 00:46:21,410

there you've got really good French

1119

00:46:25,030 --> 00:46:22,970

polish and you've got never got chipped

1120

00:46:36,310 --> 00:46:25,040

nails you don't what's your secret you

1121

00:46:37,930 --> 00:46:36,320

don't bite or something like that's the

1122

00:46:39,190 --> 00:46:37,940

best advice I've had on the future for

1123

00:46:40,180 --> 00:46:39,200

ages I think if you talk and what are

1124

00:46:43,210 --> 00:46:40,190

you looking forward to today here at

1125

00:46:44,710 --> 00:46:43,220

skeptic at cupcake Camp yes cupcake

1126

00:46:46,660 --> 00:46:44,720

candy it's the elephant in the room

1127

00:46:48,370 --> 00:46:46,670

isn't it I hear there's a big big thing

1128

00:46:53,860 --> 00:46:48,380

big push on strawberry this year for

1129

00:46:55,090 --> 00:46:53,870

some reason see I touch a note of

1130

00:46:56,830 --> 00:46:55,100

skepticism in your voice because you're

1131

00:46:58,030 --> 00:46:56,840

a chocolate person is that why no it's

1132

00:46:59,890 --> 00:46:58,040

because I said perhaps they're in season

1133

00:47:01,240 --> 00:46:59,900

it's a good comment but I noticed at the

1134

00:47:03,070 --> 00:47:01,250

supermarket the other day they're quite

1135

00:47:06,160 --> 00:47:03,080

expensive so they're probably not we'll

1136

00:47:08,350 --> 00:47:06,170

all see you thank you sir look I got to

1137

00:47:12,040 --> 00:47:08,360

say it's not often that someone delivers

1138

00:47:14,020 --> 00:47:12,050

a skip decamp lick chip with half a read

1139

00:47:16,330 --> 00:47:14,030

half a bottle of red already in the bag

1140

00:47:18,460 --> 00:47:16,340

Pete well I think sometimes you just

1141

00:47:21,280 --> 00:47:18,470

need a little bit of loosening up to get

1142

00:47:23,290 --> 00:47:21,290

going I'm on a rather shy and laid-back

1143

00:47:24,580 --> 00:47:23,300

to a person and sometimes I need a bit

1144

00:47:26,470 --> 00:47:24,590

of alcohol in me just to look get it

1145

00:47:30,370 --> 00:47:26,480

going in China because I do what is your

1146

00:47:32,170 --> 00:47:30,380

your website - hey it's ratbags calm now

1147

00:47:33,580 --> 00:47:32,180

you a well-known troublemaker and you

1148

00:47:34,780 --> 00:47:33,590

were giving an example there well

1149

00:47:36,310 --> 00:47:34,790

basically we're just showing us a few of

1150

00:47:37,990 --> 00:47:36,320

the abusive emails you've got over the

1151  
00:47:40,600 --> 00:47:38,000  
years yes

1152  
00:47:42,190 --> 00:47:40,610  
as I said right at the start if you take

1153  
00:47:44,560 --> 00:47:42,200  
any kind of controversial position on

1154  
00:47:46,450 --> 00:47:44,570  
the Internet you expect some kind of

1155  
00:47:49,150 --> 00:47:46,460  
feedback from people who might disagree

1156  
00:47:50,530 --> 00:47:49,160  
with you some that is that agreement

1157  
00:47:52,600 --> 00:47:50,540  
disagreement is quite rational and

1158  
00:47:53,650 --> 00:47:52,610  
reasonable but what I was trying to do

1159  
00:47:55,000 --> 00:47:53,660  
is the stuff that isn't the sort of

1160  
00:47:58,330 --> 00:47:55,010  
thing where people really just go nuts

1161  
00:48:00,820 --> 00:47:58,340  
or they threaten you at illegal what I

1162  
00:48:01,870 --> 00:48:00,830  
want to find everything is I asked you a

1163  
00:48:03,520 --> 00:48:01,880

question at the end there that most

1164

00:48:05,110 --> 00:48:03,530

people who do you harm or have intent to

1165

00:48:06,490 --> 00:48:05,120

do harm don't normally give you a lot of

1166

00:48:07,900 --> 00:48:06,500

warning they just go bang that's it

1167

00:48:09,280 --> 00:48:07,910

people but most people make a lot of

1168

00:48:11,410 --> 00:48:09,290

noise and don't do anything particularly

1169

00:48:13,360 --> 00:48:11,420

with emails and on the internet well

1170

00:48:15,070 --> 00:48:13,370

wonder is the one sure warning sign that

1171

00:48:15,930 --> 00:48:15,080

you should be very careful of that it

1172

00:48:17,820 --> 00:48:15,940

will generate

1173

00:48:20,940 --> 00:48:17,830

to the real-world trouble a letter from

1174

00:48:22,740 --> 00:48:20,950

a real lawyer really anything else I've

1175

00:48:23,940 --> 00:48:22,750

always taken the view that people can

1176  
00:48:26,610 --> 00:48:23,950  
threaten me as much as they'd like say

1177  
00:48:28,860 --> 00:48:26,620  
what they like about me but really I was

1178  
00:48:30,810 --> 00:48:28,870  
saying in 14 years I've only ever had

1179  
00:48:33,390 --> 00:48:30,820  
through a four contact from actual real

1180  
00:48:34,740 --> 00:48:33,400  
lawyers one of those withdrew in the

1181  
00:48:36,000 --> 00:48:34,750  
u.s. that was a ridiculous court case

1182  
00:48:38,550 --> 00:48:36,010  
anyway they sued about 100 different

1183  
00:48:42,630 --> 00:48:38,560  
people including domain names and people

1184  
00:48:44,760 --> 00:48:42,640  
that even do exist one was a lawyer for

1185  
00:48:47,010 --> 00:48:44,770  
a quack operation in Sydney and I simply

1186  
00:48:48,870 --> 00:48:47,020  
asked them to produce the evidence these

1187  
00:48:50,310 --> 00:48:48,880  
people claimed they had and I also

1188  
00:48:52,170 --> 00:48:50,320

pointed out that the company had issued

1189

00:48:53,940 --> 00:48:52,180

a media release things the HR policy was

1190

00:48:55,680 --> 00:48:53,950

corrupt that they weren't in violation

1191

00:48:57,060 --> 00:48:55,690

of the Trade Practices Act which was in

1192

00:48:59,130 --> 00:48:57,070

violation of their settlement with the a

1193

00:49:00,000 --> 00:48:59,140

Triple C and I sent that media release

1194

00:49:01,170 --> 00:49:00,010

to the lawyers never heard from them

1195

00:49:02,910 --> 00:49:01,180

again

1196

00:49:03,330 --> 00:49:02,920

the other two I've been dragged into

1197

00:49:05,040 --> 00:49:03,340

court

1198

00:49:08,070 --> 00:49:05,050

one was with Merle Dorie and the certain

1199

00:49:09,810 --> 00:49:08,080

vaccination network who spent just over

1200

00:49:11,880 --> 00:49:09,820

a year Ragman the court that's

1201  
00:49:13,710 --> 00:49:11,890  
ridiculous applicator hidden violence

1202  
00:49:15,090 --> 00:49:13,720  
order and the other was a company that

1203  
00:49:16,590 --> 00:49:15,100  
had been found by the federal court to

1204  
00:49:19,230 --> 00:49:16,600  
be operating a local pyramid scheme and

1205  
00:49:20,370 --> 00:49:19,240  
I reported it my objective of that and

1206  
00:49:22,800 --> 00:49:20,380  
drag me to court claiming it was

1207  
00:49:25,020 --> 00:49:22,810  
damaging their business so you advise if

1208  
00:49:26,940 --> 00:49:25,030  
you do get even an alarming email from

1209  
00:49:29,310 --> 00:49:26,950  
someone threatening things is to not

1210  
00:49:31,710 --> 00:49:29,320  
reply at all is silence the best reply I

1211  
00:49:33,060 --> 00:49:31,720  
think so yes I bid I reply sometimes the

1212  
00:49:35,520 --> 00:49:33,070  
burly crazy ones that are obviously

1213  
00:49:37,320 --> 00:49:35,530

crazy or ones that where people don't

1214

00:49:39,150 --> 00:49:37,330

seem to make any point at all if someone

1215

00:49:40,020 --> 00:49:39,160

actually emails me and says I am going

1216

00:49:42,390 --> 00:49:40,030

to sue you

1217

00:49:44,070 --> 00:49:42,400

I don't reply I put it on a web page

1218

00:49:45,450 --> 00:49:44,080

I've got listening back us illegal

1219

00:49:47,910 --> 00:49:45,460

threats with the number of days into the

1220

00:49:49,890 --> 00:49:47,920

threat was made and just wait for it to

1221

00:49:52,290 --> 00:49:49,900

happen because in most cases they aren't

1222

00:49:55,170 --> 00:49:52,300

going to do it and what category has got

1223

00:49:56,430 --> 00:49:55,180

you the most hate mail is it is it

1224

00:49:59,400 --> 00:49:56,440

people that you would consider

1225

00:50:02,340 --> 00:49:59,410

charlatans or people that are trading in

1226

00:50:03,270 --> 00:50:02,350

proprietary trading incorrectly yeah

1227

00:50:04,680 --> 00:50:03,280

what do you reckon will be the biggest

1228

00:50:06,920 --> 00:50:04,690

category the biggest category between

1229

00:50:09,330 --> 00:50:06,930

the four levira seems to look at is

1230

00:50:11,010 --> 00:50:09,340

religion or I go for religious bigotry

1231

00:50:12,960 --> 00:50:11,020

and the only vaccinations people and

1232

00:50:14,100 --> 00:50:12,970

alternative medicine people the rest

1233

00:50:15,330 --> 00:50:14,110

don't seem to mud I mean I gave an

1234

00:50:17,490 --> 00:50:15,340

example there something my Holocaust

1235

00:50:19,500 --> 00:50:17,500

denier I get almost nothing from them at

1236

00:50:21,870 --> 00:50:19,510

all yet I've said some really nasty

1237

00:50:24,300 --> 00:50:21,880

things about them but who wouldn't and

1238

00:50:26,490 --> 00:50:24,310

so the idea is to probably when you

1239

00:50:28,230 --> 00:50:26,500

do get these crackpot emails or even

1240

00:50:30,000 --> 00:50:28,240

threatening emails or what you consider

1241

00:50:31,440 --> 00:50:30,010

to be strange email should you even run

1242

00:50:33,000 --> 00:50:31,450

them past anyone else or is it just

1243

00:50:34,890 --> 00:50:33,010

enough to put them in a quiet little

1244

00:50:36,300 --> 00:50:34,900

file and not look at them again I've

1245

00:50:39,030 --> 00:50:36,310

seen enough of them Nathan no I think

1246

00:50:40,620 --> 00:50:39,040

when they're serious like I said if it

1247

00:50:44,010 --> 00:50:40,630

turns up from my lawyer then you know

1248

00:50:45,210 --> 00:50:44,020

it's serious but that generally don't

1249

00:50:46,560 --> 00:50:45,220

turn up by email with that I'll turn up

1250

00:50:49,290 --> 00:50:46,570

in in post

1251

00:50:51,930 --> 00:50:49,300

I had one one man who paid a lawyer in

1252

00:50:53,130 --> 00:50:51,940

Melbourne to write me a letter reading

1253

00:50:54,240 --> 00:50:53,140

between the lines the lawyer had

1254

00:50:56,280 --> 00:50:54,250

actually typed this letter beautifully

1255

00:50:58,950 --> 00:50:56,290

and immediately followed by typing an

1256

00:51:00,240 --> 00:50:58,960

invoice her to and between the lines was

1257

00:51:01,140 --> 00:51:00,250

there is this lunatic in my office and

1258

00:51:04,260 --> 00:51:01,150

the only way I can get rid of putting

1259

00:51:06,840 --> 00:51:04,270

this by typing this letter to you see if

1260

00:51:08,040 --> 00:51:06,850

lawyers have to be responded to simple

1261

00:51:09,900 --> 00:51:08,050

threats someone's saying I'm going to

1262

00:51:13,710 --> 00:51:09,910

sue you I don't respond to that other

1263

00:51:14,970 --> 00:51:13,720

than saying get on with it what do you

1264

00:51:18,150 --> 00:51:14,980

think of the focus of this year's script

1265

00:51:20,580 --> 00:51:18,160

you can most get decamps exactly no real

1266

00:51:22,550 --> 00:51:20,590

focus exactly over the place we've had

1267

00:51:24,900 --> 00:51:22,560

some controversy already haven't we yes

1268

00:51:26,280 --> 00:51:24,910

I haven't I didn't go to the

1269

00:51:27,930 --> 00:51:26,290

controversial talk I was somewhere else

1270

00:51:32,610 --> 00:51:27,940

but I believe that it was extremely

1271

00:51:34,290 --> 00:51:32,620

controversial the only thing we can beat

1272

00:51:35,580 --> 00:51:34,300

that controversy is the cupcake

1273

00:51:37,590 --> 00:51:35,590

competition that comes up later

1274

00:51:39,660 --> 00:51:37,600

it's always fun reversal yes it is

1275

00:51:41,310 --> 00:51:39,670

that's right particularly because most

1276

00:51:43,220 --> 00:51:41,320

of the entries lose this time sue to be

1277

00:51:46,200 --> 00:51:43,230

completely organized the cupcake camps

1278

00:51:47,370 --> 00:51:46,210

and so I'm actually and the problem is

1279

00:51:49,020 --> 00:51:47,380

one of them is my daughter so I can't

1280

00:51:51,840 --> 00:51:49,030

give her the prize because that would be

1281

00:51:53,540 --> 00:51:51,850

seen as nepotism the other two are

1282

00:51:55,590 --> 00:51:53,550

friends of mine told obviously hypnotism

1283

00:51:57,030 --> 00:51:55,600

I'm not quite sure how we're going to

1284

00:51:58,410 --> 00:51:57,040

actually judge this and I think you

1285

00:51:59,910 --> 00:51:58,420

should be disqualified from it that's

1286

00:52:00,960 --> 00:51:59,920

the simple guess that'll save me buying

1287

00:52:06,180 --> 00:52:00,970

a bottle of wine to give us the prize

1288

00:52:08,930 --> 00:52:06,190

you drank it anyway people I didn't know

1289

00:52:11,610 --> 00:52:08,940

that was something else's wine I drink

1290

00:52:12,840 --> 00:52:11,620

actually I said before I know I have

1291

00:52:14,280 --> 00:52:12,850

actually been on stage with a glass in

1292

00:52:16,320 --> 00:52:14,290

my hand before and the last time I

1293

00:52:17,640 --> 00:52:16,330

started but halfway to a double facepalm

1294

00:52:31,039 --> 00:52:17,650

with a beer in my hand before I realized

1295

00:52:35,640 --> 00:52:33,839

virtual skeptics is a weekly web show in

1296

00:52:37,950 --> 00:52:35,650

which we discuss the latest news in

1297

00:52:39,470 --> 00:52:37,960

skepticism whether it's a new case of

1298

00:52:41,549 --> 00:52:39,480

spontaneous human combustion a

1299

00:52:43,890 --> 00:52:41,559

conspiracy theory the latest update on

1300

00:52:45,539 --> 00:52:43,900

the upcoming robot apocalypse tech news

1301

00:52:48,029 --> 00:52:45,549

for skeptics are the latest wacky

1302

00:52:50,130 --> 00:52:48,039

religious claim we cover it all we

1303

00:52:52,589 --> 00:52:50,140

record the show live as a Google Plus on

1304

00:52:54,960 --> 00:52:52,599

air hangout so join us and our host

1305

00:52:57,180 --> 00:52:54,970

Brian Gregory for an hour of mostly

1306

00:52:59,910 --> 00:52:57,190

intelligent talk every Wednesday at 8

1307

00:53:02,730 --> 00:52:59,920

p.m. Eastern u.s. time watch us at

1308

00:53:05,579 --> 00:53:02,740

virtual skeptics comm and participate in

1309

00:53:07,680 --> 00:53:05,589

the show on our hashtag virtual skeptics

1310

00:53:09,390 --> 00:53:07,690

the virtual skeptics

1311

00:53:21,750 --> 00:53:09,400

it's like Meet the Press but with

1312

00:53:27,040 --> 00:53:24,190

thank you for listening to the skeptic

1313

00:53:28,900 --> 00:53:27,050

zone now my friends not long to go now

1314

00:53:31,870 --> 00:53:28,910

before the Australian skeptics National

1315

00:53:34,900 --> 00:53:31,880

Convention in Canberra there are tickets

1316

00:53:39,100 --> 00:53:34,910

still left not many I think they're down

1317

00:53:41,740 --> 00:53:39,110

to the last few I wonderful yeah they

1318

00:53:43,420 --> 00:53:41,750

might even contemplate releasing some

1319

00:53:45,370 --> 00:53:43,430

more seats I'm not sure if they are

1320

00:53:46,960 --> 00:53:45,380

going to do that they might have to

1321

00:53:49,540 --> 00:53:46,970

because I know the demand for tickets

1322

00:53:51,640 --> 00:53:49,550

has been quite good although you can

1323

00:53:53,260 --> 00:53:51,650

still get some tickets and I hope you do

1324

00:53:54,940 --> 00:53:53,270

I hope you do the Australian skeptics

1325

00:53:58,990 --> 00:53:54,950

National Convention is always a lot of

1326  
00:54:01,270 --> 00:53:59,000  
fun national skeptics convention org is

1327  
00:54:02,410 --> 00:54:01,280  
the website you need to run to and one

1328  
00:54:04,300 --> 00:54:02,420  
of the wonderful things about the

1329  
00:54:07,600 --> 00:54:04,310  
convention this year is all the fringe

1330  
00:54:10,090 --> 00:54:07,610  
events revolving around the convention

1331  
00:54:12,640 --> 00:54:10,100  
which are absolutely free there's a

1332  
00:54:15,550 --> 00:54:12,650  
science night on Friday night of the

1333  
00:54:17,770 --> 00:54:15,560  
convention at the CSIRO Discovery Center

1334  
00:54:20,170 --> 00:54:17,780  
with yours truly dr. Rately Christopher

1335  
00:54:22,180 --> 00:54:20,180  
French and other people explaining

1336  
00:54:24,250 --> 00:54:22,190  
chatting about being there for science

1337  
00:54:26,500 --> 00:54:24,260  
absolutely free and other events run to

1338  
00:54:27,400 --> 00:54:26,510

their website and find out more what a

1339

00:54:30,100 --> 00:54:27,410

great idea

1340

00:54:32,370 --> 00:54:30,110

and I must thank the Minnesota skeptics

1341

00:54:35,710 --> 00:54:32,380

very much Thank You Minnesota skeptics

1342

00:54:38,290 --> 00:54:35,720

oof-dah I think they say there something

1343

00:54:40,930 --> 00:54:38,300

like that it's Norwegian never mind

1344

00:54:42,700 --> 00:54:40,940

they sent me their t-shirt skeptical

1345

00:54:44,350 --> 00:54:42,710

loon is skeptical it says and I wore

1346

00:54:47,140 --> 00:54:44,360

that proudly round Sydney and I'll

1347

00:54:49,840 --> 00:54:47,150

continue to do so Minnesota skeptics I

1348

00:54:52,450 --> 00:54:49,850

thank you very much and I'll put a link

1349

00:54:53,920 --> 00:54:52,460

to your um your website on the show

1350

00:54:55,870 --> 00:54:53,930

notes for this week or you could just

1351

00:54:58,960 --> 00:54:55,880

google Minnesota skeptics you'll find

1352

00:55:01,450 --> 00:54:58,970

them and before I go before I go thank

1353

00:55:03,490 --> 00:55:01,460

you to all those people who do subscribe

1354

00:55:06,010 --> 00:55:03,500

to the skeptic zone you don't have to

1355

00:55:09,160 --> 00:55:06,020

you can enjoy it for free and I'm and

1356

00:55:13,270 --> 00:55:09,170

I'm so pleased you do but if you want to

1357

00:55:15,130 --> 00:55:13,280

chip in and well quite frankly if people

1358

00:55:16,450 --> 00:55:15,140

didn't chip in there would be no skeptic

1359

00:55:19,170 --> 00:55:16,460

zone I couldn't afford to do this

1360

00:55:22,960 --> 00:55:19,180

without without the financial support of

1361

00:55:25,720 --> 00:55:22,970

people just like you chip in less than a

1362

00:55:28,990 --> 00:55:25,730

dollar a week its money you'll never

1363

00:55:30,910 --> 00:55:29,000

miss but collectively it means a lot to

1364

00:55:32,339 --> 00:55:30,920

the sceptic zone it keeps the skeptic

1365

00:55:34,469 --> 00:55:32,349

zone going

1366

00:55:36,329 --> 00:55:34,479

how about this how about this why not do

1367

00:55:39,809 --> 00:55:36,339

it for a month if you've never chipped

1368

00:55:43,049 --> 00:55:39,819

into the sceptic zone why not kick for

1369

00:55:45,359 --> 00:55:43,059

dollars my way simply by subscribing for

1370

00:55:46,739 --> 00:55:45,369

a month at the end of the month thank

1371

00:55:48,839 --> 00:55:46,749

you very much I appreciate that very

1372

00:55:51,509 --> 00:55:48,849

much and you don't have to do it anymore

1373

00:55:54,859 --> 00:55:51,519

or you can continue if you wish it

1374

00:55:57,809 --> 00:55:54,869

really does help our visit WWF dicks on

1375

00:56:00,509 --> 00:55:57,819

TV and again a big thank you to those

1376  
00:56:03,420 --> 00:56:00,519  
people who do regularly chip in a dollar

1377  
00:56:05,099 --> 00:56:03,430  
or sometimes even more a week over the

1378  
00:56:07,249 --> 00:56:05,109  
years we've managed to do things like

1379  
00:56:09,239 --> 00:56:07,259  
buy equipment for the sceptic zone

1380  
00:56:11,400 --> 00:56:09,249  
microphones for dr. ray chief for

1381  
00:56:14,099 --> 00:56:11,410  
example and an hour announcer Jim

1382  
00:56:15,359 --> 00:56:14,109  
Walsh's got a microphone other bits and

1383  
00:56:19,640 --> 00:56:15,369  
pieces it's all been really great

1384  
00:56:22,319 --> 00:56:19,650  
including my friends a couple years ago

1385  
00:56:24,599 --> 00:56:22,329  
due to the generosity of skeptics own

1386  
00:56:27,299 --> 00:56:24,609  
listeners we were able to get Maynard a

1387  
00:56:30,479 --> 00:56:27,309  
ticket to Las Vegas where he reported on

1388  
00:56:33,299 --> 00:56:30,489

Tam and those reports lasted for months

1389

00:56:35,069 --> 00:56:33,309

that was fantastic stuff look forward to

1390

00:56:36,539 --> 00:56:35,079

more reports from Maynard from the

1391

00:56:39,509 --> 00:56:36,549

Australian skeptics National Convention

1392

00:56:42,029 --> 00:56:39,519

so your contribution actually really

1393

00:56:43,289 --> 00:56:42,039

does go a long way coming up on next

1394

00:56:45,749 --> 00:56:43,299

week's show we're going to be speaking

1395

00:56:48,420 --> 00:56:45,759

to a Norwegian author about his book on

1396

00:56:51,079 --> 00:56:48,430

the placebo effect and until then until

1397

00:56:55,620 --> 00:56:51,089

next week this is Richard Saunders and

1398

00:57:00,359 --> 00:56:55,630

come here come on come on and Fred the

1399

00:57:08,700 --> 00:57:00,369

cat yes come on Fred hello Fred signing

1400

00:57:11,130 --> 00:57:08,710

off from Sydney Australia you've been

1401

00:57:13,910 --> 00:57:11,140

listening to the skeptic zone