

**THE  
SKEPTIC  
ZONE  
PODCAST**

[www.skepticzone.tv](http://www.skepticzone.tv)

1  
00:00:12,370 --> 00:00:09,110  
welcome to the skeptic zone the podcast

2  
00:00:22,620 --> 00:00:12,380  
from Australia for science and reason

3  
00:00:26,010 --> 00:00:22,630  
[Music]

4  
00:00:30,430 --> 00:00:26,020  
yes it's the skeptic Zone episode number

5  
00:00:32,560 --> 00:00:30,440  
426 for the eighteenth of December 2016

6  
00:00:35,710 --> 00:00:32,570  
Richard Saunders here with you from the

7  
00:00:38,410 --> 00:00:35,720  
Bay Area the San Francisco Bay Area here

8  
00:00:41,920 --> 00:00:38,420  
in California where it is nice and

9  
00:00:45,760 --> 00:00:41,930  
chilly and cold well for me such a

10  
00:00:47,680 --> 00:00:45,770  
pleasant change after a very sticky hot

11  
00:00:50,649 --> 00:00:47,690  
muggy week in Sydney with a couple of

12  
00:00:52,570 --> 00:00:50,659  
cold days I don't know if its climate

13  
00:00:56,110 --> 00:00:52,580

change or what's going on but crazy

14

00:01:00,310 --> 00:00:56,120

weather in Sydney but cool crisp sunny

15

00:01:01,600 --> 00:01:00,320

weather here in California but you don't

16

00:01:03,219 --> 00:01:01,610

want to know about the weather you can

17

00:01:05,980 --> 00:01:03,229

always listen to the weather podcasts

18

00:01:08,080 --> 00:01:05,990

for that is there such a thing I'll have

19

00:01:12,370 --> 00:01:08,090

to have a look coming up on this week's

20

00:01:16,000 --> 00:01:12,380

show a grain of salt Iran sir give get

21

00:01:18,670 --> 00:01:16,010

more from QED earlier in the year and

22

00:01:21,460 --> 00:01:18,680

the question explore discover convention

23

00:01:24,249 --> 00:01:21,470

in Manchester this week I run chats with

24

00:01:27,510 --> 00:01:24,259

Britt Hermes a former naturopathic

25

00:01:30,279 --> 00:01:27,520

doctor who shares the hard truths about

26

00:01:34,240 --> 00:01:30,289

naturopathic medicine to protect

27

00:01:36,880 --> 00:01:34,250

patients our messages please don't be

28

00:01:39,609 --> 00:01:36,890

fooled by natural and alternative

29

00:01:41,230 --> 00:01:39,619

medicine what an interesting interview

30

00:01:45,310 --> 00:01:41,240

this is my friends what an interesting

31

00:01:47,550 --> 00:01:45,320

interview with somebody from should we

32

00:01:50,649 --> 00:01:47,560

say or could we say the other side

33

00:01:53,889 --> 00:01:50,659

something like that so somebody who used

34

00:01:58,090 --> 00:01:53,899

to practice what we regard as a nonsense

35

00:02:01,239 --> 00:01:58,100

and it dawned upon her that it was in

36

00:02:03,880 --> 00:02:01,249

fact nonsense and now she's out to help

37

00:02:06,069 --> 00:02:03,890

expose quackery coming up at the top of

38

00:02:08,380 --> 00:02:06,079

the show an interesting interview not to

39

00:02:11,710 --> 00:02:08,390

be missed then after the brakes are more

40

00:02:13,330 --> 00:02:11,720

from my recent trip to a new zealand

41

00:02:16,059 --> 00:02:13,340

where I was a guest of the New Zealand

42

00:02:18,340 --> 00:02:16,069

skeptics this week i chat to susan go

43

00:02:21,370 --> 00:02:18,350

back an old friend from guerrilla

44

00:02:23,410 --> 00:02:21,380

skepticism on wikipedia what's the

45

00:02:24,790 --> 00:02:23,420

latest what's the latest with guerrilla

46

00:02:27,370 --> 00:02:24,800

skepticism what's a bit of the history

47

00:02:31,150 --> 00:02:27,380

of it and what can you do to help find

48

00:02:32,500 --> 00:02:31,160

out with my interview with Susan Kovac

49

00:02:34,570 --> 00:02:32,510

oh and don't forget to look at the show

50

00:02:37,930 --> 00:02:34,580

notes for this week's episode for a

51  
00:02:39,700 --> 00:02:37,940  
video of Susan at the famous puzzling

52  
00:02:43,150 --> 00:02:39,710  
world running around the optical

53  
00:02:46,960 --> 00:02:43,160  
illusions then after that it's brouhaha

54  
00:02:49,720 --> 00:02:46,970  
quick science segments this week with

55  
00:02:51,310 --> 00:02:49,730  
Casey Harrigan now case is going to be

56  
00:02:54,850 --> 00:02:51,320  
looking at some of the top science

57  
00:02:58,000 --> 00:02:54,860  
stories for 2016 also reviewing some

58  
00:03:02,410 --> 00:02:58,010  
science fiction movies and asking the

59  
00:03:06,220 --> 00:03:02,420  
big question can robots sweat that's

60  
00:03:08,140 --> 00:03:06,230  
brouhaha from Australia science TV Linda

61  
00:03:10,210 --> 00:03:08,150  
round off the show guest reporter Kevin

62  
00:03:12,940 --> 00:03:10,220  
Davies interviews professor Ross Hannon

63  
00:03:14,650 --> 00:03:12,950

head of the department of cancer biology

64

00:03:17,110 --> 00:03:14,660

and therapeutics at the John Curtin

65

00:03:18,550 --> 00:03:17,120

school of medical research Australian

66

00:03:21,310 --> 00:03:18,560

National University College of Medicine

67

00:03:23,850 --> 00:03:21,320

what a title that is what's the latest

68

00:03:26,710 --> 00:03:23,860

on cancer research in Australia and

69

00:03:30,880 --> 00:03:26,720

what's the link to Jackie Chan the

70

00:03:33,430 --> 00:03:30,890

famous actor / director in his a little

71

00:03:36,460 --> 00:03:33,440

bit of trivia I'm appearing in a Jackie

72

00:03:41,430 --> 00:03:36,470

Chan movie although very briefly coming

73

00:03:43,840 --> 00:03:41,440

up soon which was partly shot in Sydney

74

00:03:46,300 --> 00:03:43,850

blink and you'll miss me however there

75

00:03:48,640 --> 00:03:46,310

you go cancer research in Australia

76

00:03:50,590 --> 00:03:48,650

coming up at the end of the show now

77

00:03:52,090 --> 00:03:50,600

don't forget those people in California

78

00:03:55,180 --> 00:03:52,100

if you're in the bay area i'll be

79

00:03:57,940 --> 00:03:55,190

speaking on thursday december the 29th

80

00:03:59,740 --> 00:03:57,950

in berkeley and if you're in the orange

81

00:04:04,060 --> 00:03:59,750

county los angeles area i'll be speaking

82

00:04:05,949 --> 00:04:04,070

on friday the 30th of december at irvine

83

00:04:07,449 --> 00:04:05,959

but more information about that later on

84

00:04:10,240 --> 00:04:07,459

in the show or just look at the show

85

00:04:12,610 --> 00:04:10,250

notes for this week's episode well it's

86

00:04:17,740 --> 00:04:12,620

time for me to run upstairs now have

87

00:04:20,080 --> 00:04:17,750

some beef stew on a cold night that

88

00:04:24,880 --> 00:04:20,090

sounds like a good idea and contemplate

89

00:04:27,730 --> 00:04:24,890

the next few days of jet lag oh what fun

90

00:04:30,700 --> 00:04:27,740

it isn't if somebody can come up with a

91

00:04:33,460 --> 00:04:30,710

cure for jet lag well I do all that I

92

00:04:50,879 --> 00:04:33,470

hope you enjoy the skeptics earned

93

00:05:02,590 --> 00:04:53,670

let's all take this with a grain of salt

94

00:05:06,400 --> 00:05:02,600

he's around ticket i'm here with treat

95

00:05:10,150 --> 00:05:06,410

Henry's acuity in the bathroom so we'll

96

00:05:13,029 --> 00:05:10,160

try to speak quietly Briggs can you tell

97

00:05:15,969 --> 00:05:13,039

the listeners to the skeptic zone why

98

00:05:18,430 --> 00:05:15,979

I'm speaking to you I think you want to

99

00:05:21,610 --> 00:05:18,440

speak with me because I won the Occam

100

00:05:24,490 --> 00:05:21,620

award for best blog and that was a very

101  
00:05:26,590 --> 00:05:24,500  
exciting moment for me last night and

102  
00:05:29,830 --> 00:05:26,600  
you were sitting next to me at the table

103  
00:05:31,750 --> 00:05:29,840  
and dinner last night and applauded me

104  
00:05:34,390 --> 00:05:31,760  
as I nervously made my way up to the

105  
00:05:36,090 --> 00:05:34,400  
stage and fumbled my way through an

106  
00:05:39,580 --> 00:05:36,100  
acceptance speech very inspiring

107  
00:05:41,740 --> 00:05:39,590  
acceptance speech well um you know I've

108  
00:05:43,920 --> 00:05:41,750  
been so graciously welcomed into the

109  
00:05:49,000 --> 00:05:43,930  
skeptic community and this is my first

110  
00:05:51,159 --> 00:05:49,010  
QED con and it's been such a really cool

111  
00:05:53,589 --> 00:05:51,169  
experience to meet all of these Twitter

112  
00:05:58,950 --> 00:05:53,599  
personalities live and in the flesh

113  
00:06:01,570 --> 00:05:58,960

they're not just cool characters and um

114

00:06:06,250 --> 00:06:01,580

it came it came from the heart I've been

115

00:06:08,650 --> 00:06:06,260

really overwhelmed by how kind and how

116

00:06:10,719 --> 00:06:08,660

cool everybody has been it's been a

117

00:06:12,580 --> 00:06:10,729

really incredible experience okay so

118

00:06:15,250 --> 00:06:12,590

let's backtrack a little bit okay so you

119

00:06:18,670 --> 00:06:15,260

gave a talk yesterday that told the

120

00:06:22,029 --> 00:06:18,680

audience about your journey so you were

121

00:06:25,000 --> 00:06:22,039

a natural path yes I was a practicing

122

00:06:28,180 --> 00:06:25,010

naturopathic air-quote doctor in the US

123

00:06:30,279 --> 00:06:28,190

for three years i graduated from bastyr

124

00:06:32,080 --> 00:06:30,289

university and then went into practice

125

00:06:33,969 --> 00:06:32,090

as a naturopath thinking that i was

126  
00:06:37,719 --> 00:06:33,979  
adequately trained to practice medicine

127  
00:06:39,820 --> 00:06:37,729  
and not just adequately trained to

128  
00:06:41,920 --> 00:06:39,830  
practice medicine but also that i had

129  
00:06:44,140 --> 00:06:41,930  
special knowledge about how the body

130  
00:06:47,020 --> 00:06:44,150  
worked about how herbal medicines work

131  
00:06:49,380 --> 00:06:47,030  
that homeopathy was real and that

132  
00:06:51,420 --> 00:06:49,390  
naturopathy was better than

133  
00:06:55,380 --> 00:06:51,430  
medicine that somehow naturopaths had

134  
00:06:57,900 --> 00:06:55,390  
this special sets of diagnosing tools to

135  
00:07:00,120 --> 00:06:57,910  
be able to find these so-called root

136  
00:07:02,550 --> 00:07:00,130  
causes of diseases that medical doctors

137  
00:07:04,590 --> 00:07:02,560  
were somehow missing in their amazing

138  
00:07:07,860 --> 00:07:04,600

medical training and that I was getting

139

00:07:10,230 --> 00:07:07,870

in my pseudo pseudo medical training

140

00:07:11,940 --> 00:07:10,240

pseudo naturopathic training and then at

141

00:07:14,130 --> 00:07:11,950

some point I we obviously not going to

142

00:07:15,240 --> 00:07:14,140

repeat the entire 50-minute talk that

143

00:07:17,340 --> 00:07:15,250

you gave yesterday that at some point

144

00:07:19,830 --> 00:07:17,350

you basically realized that the evidence

145

00:07:22,710 --> 00:07:19,840

wasn't there so what happened what did

146

00:07:24,450 --> 00:07:22,720

you decide to do I I had a pretty

147

00:07:26,880 --> 00:07:24,460

terrible experience where basically my

148

00:07:28,410 --> 00:07:26,890

boss had been importing a medication the

149

00:07:30,270 --> 00:07:28,420

medication was not approved by the FDA

150

00:07:32,520 --> 00:07:30,280

which makes it illegal and I found

151  
00:07:34,410 --> 00:07:32,530  
myself in the middle of this mess and so

152  
00:07:37,080 --> 00:07:34,420  
I walked away from the profession

153  
00:07:39,840 --> 00:07:37,090  
feeling like the majority of naturopathy

154  
00:07:42,840 --> 00:07:39,850  
is unethical and that that I is a

155  
00:07:46,860 --> 00:07:42,850  
natural path was a fraud and I decided

156  
00:07:49,200 --> 00:07:46,870  
to expose that because as I started to

157  
00:07:51,300 --> 00:07:49,210  
look into what my education consisted of

158  
00:07:54,140 --> 00:07:51,310  
and how I was trained I realized that by

159  
00:07:56,700 --> 00:07:54,150  
default naturopaths are frauds and that

160  
00:07:58,500 --> 00:07:56,710  
sure people not robots are good people

161  
00:08:00,870 --> 00:07:58,510  
but we don't have adequate medical

162  
00:08:03,120 --> 00:08:00,880  
training in order to provide competent

163  
00:08:04,710 --> 00:08:03,130

medical care and patience needed to know

164

00:08:06,150 --> 00:08:04,720

that this was not medicine and I felt

165

00:08:09,930 --> 00:08:06,160

ethically compelled to speak out about

166

00:08:11,850 --> 00:08:09,940

it and what were the repercussions for

167

00:08:15,080 --> 00:08:11,860

you because there were significant

168

00:08:18,570 --> 00:08:15,090

repercussions I well the loss of a

169

00:08:22,920 --> 00:08:18,580

community loss of my naturopath friends

170

00:08:25,560 --> 00:08:22,930

a lot of hate emails and the loss of

171

00:08:27,510 --> 00:08:25,570

time but more than loss of time was the

172

00:08:30,600 --> 00:08:27,520

loss of about a quarter of a million

173

00:08:32,400 --> 00:08:30,610

dollars i spent on naturopathy now

174

00:08:35,790 --> 00:08:32,410

trying to figure out how i was going to

175

00:08:37,920 --> 00:08:35,800

make any sort of a living not using this

176

00:08:40,290 --> 00:08:37,930

fake medical degree and to pay back my

177

00:08:42,870 --> 00:08:40,300

federal student loans i SAT through your

178

00:08:45,000 --> 00:08:42,880

talk yesterday and I must say that it

179

00:08:47,160 --> 00:08:45,010

was truly inspiring first of all your

180

00:08:50,550 --> 00:08:47,170

great speaker but there's something else

181

00:08:52,800 --> 00:08:50,560

that is that people find it very very

182

00:08:54,210 --> 00:08:52,810

difficult to give up something that

183

00:08:55,910 --> 00:08:54,220

they've invested a lot in other

184

00:08:59,360 --> 00:08:55,920

emotionally or financially or

185

00:09:02,120 --> 00:08:59,370

in terms of time what do you think it is

186

00:09:04,040 --> 00:09:02,130

that made you different because it is

187

00:09:05,540 --> 00:09:04,050

different most people will stick I mean

188

00:09:08,900 --> 00:09:05,550

you've actually mentioned through your

189

00:09:11,870 --> 00:09:08,910

talk several colleagues and friends who

190

00:09:13,699 --> 00:09:11,880

actually kind of know but it's fraud but

191

00:09:14,960 --> 00:09:13,709

they stick to it because as you said

192

00:09:17,389 --> 00:09:14,970

they have to make a living they have

193

00:09:18,800 --> 00:09:17,399

loans to pay and all of that what do you

194

00:09:21,170 --> 00:09:18,810

think it is that drove you to actually

195

00:09:23,540 --> 00:09:21,180

be different and make that huge

196

00:09:25,189 --> 00:09:23,550

sacrifice well I started to look at what

197

00:09:28,310 --> 00:09:25,199

natural rafts were doing because I was

198

00:09:31,129 --> 00:09:28,320

afraid basically so initially fear was a

199

00:09:33,769 --> 00:09:31,139

big motivating factor because I didn't

200

00:09:37,519 --> 00:09:33,779

really understand what I had done by

201  
00:09:41,269 --> 00:09:37,529  
helping to administer this non-approved

202  
00:09:43,160 --> 00:09:41,279  
cancer drug to patients so fear drove me

203  
00:09:46,160 --> 00:09:43,170  
to start to look at what the legal

204  
00:09:47,870 --> 00:09:46,170  
implications of that war and then after

205  
00:09:49,550 --> 00:09:47,880  
just sort of looking at it in a black

206  
00:09:52,610 --> 00:09:49,560  
and white way like what's legal what's

207  
00:09:56,300 --> 00:09:52,620  
illegal and instead to look at the the

208  
00:09:58,879 --> 00:09:56,310  
nuanced ethics of that and you know what

209  
00:10:01,519 --> 00:09:58,889  
does it mean to call yourself a doctor

210  
00:10:04,460 --> 00:10:01,529  
or a physician what kind of power comes

211  
00:10:06,110 --> 00:10:04,470  
with that you know is it ethical to

212  
00:10:08,600 --> 00:10:06,120  
charge money when you're knowingly

213  
00:10:10,880 --> 00:10:08,610

giving an ineffective remedy even if you

214

00:10:12,850 --> 00:10:10,890

think maybe that's emotionally or

215

00:10:16,519 --> 00:10:12,860

psychologically helping the patient and

216

00:10:19,280 --> 00:10:16,529

I began to form some pretty strong

217

00:10:21,199 --> 00:10:19,290

opinions around that based on a huge

218

00:10:23,960 --> 00:10:21,209

body of knowledge that was already

219

00:10:27,050 --> 00:10:23,970

present so what really helped me was the

220

00:10:28,280 --> 00:10:27,060

fact that there were many sources for me

221

00:10:30,620 --> 00:10:28,290

to turn to of course there are the

222

00:10:32,840 --> 00:10:30,630

classics even Barrett's clockwatch which

223

00:10:35,750 --> 00:10:32,850

was really difficult to read I have to

224

00:10:36,870 --> 00:10:35,760

say science-based medicine blog and then

225

00:10:40,050 --> 00:10:36,880

some

226

00:10:42,270 --> 00:10:40,060

or neutral sources of information like

227

00:10:43,650 --> 00:10:42,280

from Simon Singh and as it earns their

228

00:10:45,390 --> 00:10:43,660

book trigger treatment alternative

229

00:10:49,050 --> 00:10:45,400

medicine on trial so I started to make

230

00:10:51,750 --> 00:10:49,060

my way through I tried try to form my

231

00:10:53,850 --> 00:10:51,760

own opinions now what I found was that

232

00:10:56,880 --> 00:10:53,860

my opinions already fit with the

233

00:11:00,270 --> 00:10:56,890

opinions of many scientists and skeptics

234

00:11:02,940 --> 00:11:00,280

and so sort of fitting my voice into

235

00:11:05,760 --> 00:11:02,950

their voice was a huge light bulb moment

236

00:11:07,920 --> 00:11:05,770

for me to realize that I couldn't I

237

00:11:11,840 --> 00:11:07,930

couldn't look at myself in the mirror

238

00:11:14,520 --> 00:11:11,850

and do this I couldn't do it so you know

239

00:11:17,010 --> 00:11:14,530

with your husband in Germany so and

240

00:11:19,470 --> 00:11:17,020

you're studying studying what I'm

241

00:11:22,320 --> 00:11:19,480

studying I'm pursuing a master of

242

00:11:24,030 --> 00:11:22,330

science and biomedical research which

243

00:11:26,460 --> 00:11:24,040

you wouldn't have thought so a few years

244

00:11:28,380 --> 00:11:26,470

ago but it's quite a departure from four

245

00:11:29,610 --> 00:11:28,390

more years to you would have thought at

246

00:11:31,080 --> 00:11:29,620

the time you would have thought that it

247

00:11:32,670 --> 00:11:31,090

was science what you were doing but now

248

00:11:35,100 --> 00:11:32,680

you realize that it's quite a departure

249

00:11:37,110 --> 00:11:35,110

right yeah I thought I knew what

250

00:11:38,960 --> 00:11:37,120

research was all about I had

251  
00:11:41,790 --> 00:11:38,970  
participated a little bit in

252  
00:11:43,610 --> 00:11:41,800  
naturopathic research and looking at the

253  
00:11:47,250 --> 00:11:43,620  
effectiveness of some herbal remedies I

254  
00:11:50,820 --> 00:11:47,260  
was not doing anything close to research

255  
00:11:53,430 --> 00:11:50,830  
then but I only know that because I have

256  
00:11:57,000 --> 00:11:53,440  
gone to great lengths to re-educate

257  
00:11:59,730 --> 00:11:57,010  
myself and to integrate myself into

258  
00:12:01,380 --> 00:11:59,740  
communities that strive to produce high

259  
00:12:04,170 --> 00:12:01,390  
quality research with a high set of

260  
00:12:06,180 --> 00:12:04,180  
ethics so I've become involved with

261  
00:12:10,280 --> 00:12:06,190  
sense about science all trials campaign

262  
00:12:13,680 --> 00:12:10,290  
for example and and wanting to

263  
00:12:17,490 --> 00:12:13,690

understand all sides of the complexities

264

00:12:19,830 --> 00:12:17,500

of ethics around medicine so well you on

265

00:12:21,840 --> 00:12:19,840

the very well deserved welcome award

266

00:12:23,550 --> 00:12:21,850

last night for your blog so where is it

267

00:12:25,410 --> 00:12:23,560

where can people find your blog people

268

00:12:27,210 --> 00:12:25,420

can find me at naturopathic Diaries calm

269

00:12:28,980 --> 00:12:27,220

and you also write for science-based

270

00:12:30,900 --> 00:12:28,990

medicine or have written for sons best

271

00:12:32,580 --> 00:12:30,910

medicine I've written off and on over

272

00:12:35,460 --> 00:12:32,590

the past two years for science-based

273

00:12:37,770 --> 00:12:35,470

medicine calm I also write for science

274

00:12:40,320 --> 00:12:37,780

two point oh and I now write for forbes

275

00:12:42,570 --> 00:12:40,330

as well very nice well congratulations

276

00:12:45,680 --> 00:12:42,580

on the award and on doing the right

277

00:13:00,500 --> 00:12:45,690

thing thank you very much baby thank you

278

00:13:02,960 --> 00:13:00,510

oh do you think ink and you'll pass

279

00:13:06,950 --> 00:13:02,970

thinking the people who brought you dr.

280

00:13:11,180 --> 00:13:06,960

Neil deGrasse Tyson James Randi dr. Ben

281

00:13:13,460 --> 00:13:11,190

Goldacre dr. Lisa Randall sam Harris and

282

00:13:17,180 --> 00:13:13,470

many more are delighted to announce

283

00:13:19,670 --> 00:13:17,190

their annual pass for 2017 this pass

284

00:13:21,350 --> 00:13:19,680

allows access to all their events priced

285

00:13:23,870 --> 00:13:21,360

at just two hundred and ninety-nine

286

00:13:26,630 --> 00:13:23,880

dollars the average cost of two tickets

287

00:13:30,170 --> 00:13:26,640

the annual pass will include a VIP

288

00:13:32,480 --> 00:13:30,180

seating and a podcast and video versions

289

00:13:34,970 --> 00:13:32,490

of the event just in case you can't make

290

00:13:37,370 --> 00:13:34,980

it in person do you think ink and your

291

00:13:40,130 --> 00:13:37,380

past is a perfect way for regular

292

00:13:42,620 --> 00:13:40,140

figures to maximize their experience as

293

00:13:45,500 --> 00:13:42,630

well as a clever present for friends and

294

00:13:48,170 --> 00:13:45,510

family looking to explore smart answers

295

00:13:50,930 --> 00:13:48,180

to big questions a highlight of the

296

00:13:54,650 --> 00:13:50,940

coming season is none other than named

297

00:13:58,880 --> 00:13:54,660

Jane Goodall for more information and to

298

00:14:10,630 --> 00:13:58,890

get your annual pass visit pink inc dot

299

00:14:10,640 --> 00:14:22,430

[Music]

300

00:14:28,740 --> 00:14:27,240

so let's talk about gsam yes let's do

301

00:14:30,689 --> 00:14:28,750

that let's that's all I want to talk

302

00:14:34,079 --> 00:14:30,699

about that's it here we are we're at the

303

00:14:36,509 --> 00:14:34,089

beautiful queenstown airport having a

304

00:14:37,769 --> 00:14:36,519

little snack the conference hasn't

305

00:14:39,240 --> 00:14:37,779

really started yet but we had a bit of

306

00:14:42,480 --> 00:14:39,250

free time and we're right next door

307

00:14:43,740 --> 00:14:42,490

we're right next oh yeah back when we're

308

00:14:45,540 --> 00:14:43,750

at the conference if we look out the

309

00:14:48,150 --> 00:14:45,550

window we can way that the people flying

310

00:14:53,129 --> 00:14:48,160

in or out there are venue is an

311

00:14:54,990 --> 00:14:53,139

ambulance company yeah so go figure it's

312

00:14:57,569 --> 00:14:55,000

lovely but it's a beautiful gift

313

00:14:59,100 --> 00:14:57,579

beautiful day of you I mean I'm my talks

314

00:15:01,920 --> 00:14:59,110

gonna be rubbish but at least people oh

315

00:15:03,960 --> 00:15:01,930

no no no no no no it's gonna be

316

00:15:06,749 --> 00:15:03,970

wonderful house Gorillaz kippis isn't

317

00:15:11,490 --> 00:15:06,759

going well how is guerrilla skepticism

318

00:15:13,290 --> 00:15:11,500

on wikipedia going it is I'm going yes

319

00:15:15,750 --> 00:15:13,300

it is going I'm so proud of the people

320

00:15:18,720 --> 00:15:15,760

who are working for me and we've

321

00:15:22,350 --> 00:15:18,730

released for new pages in the last 24

322

00:15:27,139 --> 00:15:22,360

hours what are they Wow well there are

323

00:15:31,170 --> 00:15:27,149

four speakers mark hanna and Mark Bryan

324

00:15:32,939 --> 00:15:31,180

Tanya and I'm sorry I put you on the

325

00:15:34,949 --> 00:15:32,949

spot but in other words what I'm trying

326

00:15:36,600 --> 00:15:34,959

to get the point is if there's this

327

00:15:37,980 --> 00:15:36,610

because he's a conference yet and so

328

00:15:39,900 --> 00:15:37,990

you're on the ball guerrilla skepticism

329

00:15:42,090 --> 00:15:39,910

what on Wikipedia on the ball and

330

00:15:43,610 --> 00:15:42,100

updating Wikipedia right and we're going

331

00:15:46,500 --> 00:15:43,620

to be doing a lot of photographs and

332

00:15:49,980 --> 00:15:46,510

have you know I as much as we are we're

333

00:15:52,259 --> 00:15:49,990

gonna get your smiling face on the

334

00:15:53,939 --> 00:15:52,269

picture of me at the moment which folks

335

00:15:55,379 --> 00:15:53,949

unless you know it you won't see because

336

00:15:57,870 --> 00:15:55,389

it's going to be replaced tomorrow or

337

00:16:01,110 --> 00:15:57,880

the next day I have is a picture of me

338

00:16:03,269 --> 00:16:01,120

taken oh I don't know 2007 with it from

339

00:16:05,160 --> 00:16:03,279

the Australian crew I mean the Alaskan

340

00:16:08,579 --> 00:16:05,170

cruise no the picture of me on Wikipedia

341

00:16:10,889 --> 00:16:08,589

is actually a picture of me dressed up

342

00:16:13,379 --> 00:16:10,899

as a psychiatric patient on a TV show oh

343

00:16:16,470 --> 00:16:13,389

no really yeah yeah oh maybe we should

344

00:16:18,329 --> 00:16:16,480

leave it that's why if you look

345

00:16:20,819 --> 00:16:18,339

carefully i'm wearing as a

346

00:16:24,329 --> 00:16:20,829

gown of a hospital gown I get that it's

347

00:16:26,610 --> 00:16:24,339

a scrub or something like that oh my

348

00:16:29,340 --> 00:16:26,620

gosh no maybes a little bit of trivia

349

00:16:31,499 --> 00:16:29,350

for you okay there you go I am but

350

00:16:34,499 --> 00:16:31,509

anyway with new photos we're going to

351

00:16:36,449 --> 00:16:34,509

get audio and there's a lot of stuff to

352

00:16:40,259 --> 00:16:36,459

do so we've got to get all these pages

353

00:16:43,350 --> 00:16:40,269

done I was working on a page for one of

354

00:16:46,710 --> 00:16:43,360

the founders of the New Zealand skeptics

355

00:16:47,610 --> 00:16:46,720

and you know pulling in the content one

356

00:16:50,189 --> 00:16:47,620

of the thing I'm going to be talking

357

00:16:51,720 --> 00:16:50,199

about at this conference is the

358

00:16:53,460 --> 00:16:51,730

importance of gathering the history

359

00:16:54,989 --> 00:16:53,470

collecting it and putting in a place

360

00:16:56,429 --> 00:16:54,999

where we can actually get to it because

361

00:16:58,290 --> 00:16:56,439

a lot of groups don't realize that

362

00:17:00,329 --> 00:16:58,300

they're going to be a thing someday so

363

00:17:02,340 --> 00:17:00,339

that so they don't they don't take the

364

00:17:04,500 --> 00:17:02,350

photos or they don't upload them

365

00:17:07,110 --> 00:17:04,510

someplace where they can be accessed by

366

00:17:09,149 --> 00:17:07,120

a historian because basically we're

367

00:17:11,309 --> 00:17:09,159

historians yeah we're historians at the

368

00:17:13,110 --> 00:17:11,319

skeptic community and we have to be able

369

00:17:19,559 --> 00:17:13,120

to find it you were so kind to give me

370

00:17:23,159 --> 00:17:19,569

wet four gigabytes of above information

371

00:17:25,199 --> 00:17:23,169

from your collection all right I don't

372

00:17:27,539 --> 00:17:25,209

have that I just used it for I pulled up

373

00:17:30,210 --> 00:17:27,549

a video firewalking video from the New

374

00:17:32,100 --> 00:17:30,220

Zealand skeptics oh yeah I looked at my

375

00:17:34,500 --> 00:17:32,110

archives just the other day because I

376

00:17:36,419 --> 00:17:34,510

was thinking about buying another hard

377

00:17:41,340 --> 00:17:36,429

drive to back them up I think it's

378

00:17:45,149 --> 00:17:41,350

running at the moment to 260 gigabytes I

379

00:17:47,279 --> 00:17:45,159

think Wow of archival material i have at

380

00:17:51,080 --> 00:17:47,289

the moment so i need to buy bigger

381

00:17:53,210 --> 00:17:51,090

drives to back it out it was upon

382

00:17:56,070 --> 00:17:53,220

thousands of hours and this is no

383

00:17:59,160 --> 00:17:56,080

exaggeration thousands of hours of

384

00:18:01,950 --> 00:17:59,170

videos i have on skeptical matters

385

00:18:04,050 --> 00:18:01,960

because when i joined the skeptics in

386

00:18:06,540 --> 00:18:04,060

australia many years ago one of the

387

00:18:08,550 --> 00:18:06,550

first things I did was i raided the

388

00:18:10,050 --> 00:18:08,560

video library of Barry Williams a

389

00:18:13,320 --> 00:18:10,060

longtime editor of the skeptic magazine

390

00:18:17,550 --> 00:18:13,330

who for years before had recorded

391

00:18:19,800 --> 00:18:17,560

skeptical things off the telly so that

392

00:18:23,060 --> 00:18:19,810

started me off in my video archiving it

393

00:18:25,170 --> 00:18:23,070

since then raiding youtube or just

394

00:18:27,570 --> 00:18:25,180

sources here and there I've got a lot of

395

00:18:28,890 --> 00:18:27,580

stuff oh yeah and we have to have that

396

00:18:31,920 --> 00:18:28,900

and we need to get it in places where

397

00:18:35,640 --> 00:18:31,930

somebody can access it for example Barry

398

00:18:40,350 --> 00:18:35,650

car the executive director of psych on

399

00:18:42,930 --> 00:18:40,360

sigh cop he has huge metal filing

400

00:18:47,310 --> 00:18:42,940

cabinets in his office many of them full

401  
00:18:50,400 --> 00:18:47,320  
of scrapbooked newspaper clippings well

402  
00:18:51,630 --> 00:18:50,410  
that's going to be archived and what is

403  
00:18:54,000 --> 00:18:51,640  
you need to be scanned it needs to be

404  
00:18:57,480 --> 00:18:54,010  
scanned and forget scanning that takes

405  
00:18:59,940 --> 00:18:57,490  
too long I'm no plug for Apple but i

406  
00:19:01,410 --> 00:18:59,950  
have an iphone 7 and my goodness me you

407  
00:19:03,300 --> 00:19:01,420  
put that in front of a document and take

408  
00:19:05,070 --> 00:19:03,310  
a picture oh that's true and be able to

409  
00:19:06,720 --> 00:19:05,080  
scan at you'd be able to search for it

410  
00:19:08,490 --> 00:19:06,730  
yeah yeah there's so much more you need

411  
00:19:11,220 --> 00:19:08,500  
conduct that pretty quickly into a PDF

412  
00:19:12,900 --> 00:19:11,230  
which I think can be searchable there's

413  
00:19:14,910 --> 00:19:12,910

some technology that does it so yeah a

414

00:19:17,510 --> 00:19:14,920

lot of the material I have at home I do

415

00:19:20,640 --> 00:19:17,520

by taking photographs of documents and

416

00:19:22,500 --> 00:19:20,650

they're great Nick you can hi race and

417

00:19:24,600 --> 00:19:22,510

away you go and we need to have that

418

00:19:26,490 --> 00:19:24,610

done I you know if there's people out

419

00:19:28,200 --> 00:19:26,500

there who really want to help out the

420

00:19:30,510 --> 00:19:28,210

community help out to preserve our

421

00:19:31,920 --> 00:19:30,520

history that is one project that needs

422

00:19:34,890 --> 00:19:31,930

to be done and it would really support

423

00:19:36,330 --> 00:19:34,900

JSO w because we don't have the access

424

00:19:37,830 --> 00:19:36,340

to all those newspaper clippings we

425

00:19:39,990 --> 00:19:37,840

don't even know they exist you can't

426

00:19:42,030 --> 00:19:40,000

find him there are as i discovered

427

00:19:44,460 --> 00:19:42,040

recently in the skeptic zone fans will

428

00:19:46,740 --> 00:19:44,470

remember a few weeks ago I did a story

429

00:19:49,500 --> 00:19:46,750

about archiving I found lots of things

430

00:19:51,390 --> 00:19:49,510

on the web where newspapers have been

431

00:19:53,160 --> 00:19:51,400

archived there are lots in the world

432

00:19:56,130 --> 00:19:53,170

that haven't right and it needs to be

433

00:19:57,480 --> 00:19:56,140

done and in your right this sort of

434

00:19:59,790 --> 00:19:57,490

thing is invaluable for what you're

435

00:20:01,860 --> 00:19:59,800

doing we did the I rewrote the Wikipedia

436

00:20:06,330 --> 00:20:01,870

page for the New Zealand skeptics a few

437

00:20:10,890 --> 00:20:06,340

weeks ago I could not find photographs

438

00:20:13,380 --> 00:20:10,900

of the conference before 2010

439

00:20:15,720 --> 00:20:13,390

they're not there I know people had

440

00:20:17,400 --> 00:20:15,730

cameras I'm sure they're there somewhere

441

00:20:20,970 --> 00:20:17,410

but nobody can find him I can help you

442

00:20:25,350 --> 00:20:20,980

out oh because I last spoke at the New

443

00:20:29,130 --> 00:20:25,360

Zealand skeptics conference in 2003 oh I

444

00:20:30,420 --> 00:20:29,140

think and after this interview thanks to

445

00:20:32,310 --> 00:20:30,430

the wonders of the internet I can

446

00:20:34,530 --> 00:20:32,320

probably pull up photographs there you

447

00:20:37,890 --> 00:20:34,540

go we've been having conferences since

448

00:20:40,440 --> 00:20:37,900

1986 that i did not know that's

449

00:20:42,810 --> 00:20:40,450

impressive I had no idea myself I had to

450

00:20:44,340 --> 00:20:42,820

go back and search and the people here

451  
00:20:46,350 --> 00:20:44,350  
have been very very generous with their

452  
00:20:48,780 --> 00:20:46,360  
time helping me find these records but

453  
00:20:50,280 --> 00:20:48,790  
there's very few records to find we went

454  
00:20:53,060 --> 00:20:50,290  
through the archives of all the old

455  
00:20:55,740 --> 00:20:53,070  
magazines that they have they have

456  
00:20:57,540 --> 00:20:55,750  
written and we were able to get a little

457  
00:21:00,240 --> 00:20:57,550  
bit of information here they're like

458  
00:21:03,240 --> 00:21:00,250  
maybe you would say in our last

459  
00:21:05,670 --> 00:21:03,250  
conference in Wellington and I thought

460  
00:21:07,830 --> 00:21:05,680  
oh the conferences in Wellington that's

461  
00:21:10,350 --> 00:21:07,840  
all I know you know you know the year

462  
00:21:13,260 --> 00:21:10,360  
and in the city but that was all there's

463  
00:21:16,710 --> 00:21:13,270

no flyer there's no photographs there's

464

00:21:20,160 --> 00:21:16,720

I don't who the speakers were yeah well

465

00:21:23,130 --> 00:21:20,170

i did so long now I don't I cannot

466

00:21:26,340 --> 00:21:23,140

remember who the speakers were on the

467

00:21:29,250 --> 00:21:26,350

conference that I went to I went with a

468

00:21:30,870 --> 00:21:29,260

Linda and we were some of the original

469

00:21:33,330 --> 00:21:30,880

members of the mr. investigated to show

470

00:21:35,610 --> 00:21:33,340

and we did a performance here in New

471

00:21:37,140 --> 00:21:35,620

Zealand it was a Christchurch yeah so we

472

00:21:38,430 --> 00:21:37,150

did a very early version of the mystery

473

00:21:40,260 --> 00:21:38,440

investigators show complete with the

474

00:21:42,000 --> 00:21:40,270

better nails because they had a bed of

475

00:21:43,590 --> 00:21:42,010

nails believe it or not I was going to

476  
00:21:45,930 --> 00:21:43,600  
ask how'd you get the bed of nails I had

477  
00:21:47,880 --> 00:21:45,940  
they had one and we did water divining

478  
00:21:52,350 --> 00:21:47,890  
in the hollow and you know what way and

479  
00:21:55,040 --> 00:21:52,360  
now we chat about it I have the video of

480  
00:21:57,900 --> 00:21:55,050  
it at home because I videoed that

481  
00:21:59,400 --> 00:21:57,910  
performance how about that well now I

482  
00:22:01,470 --> 00:21:59,410  
know what we're going to be doing later

483  
00:22:03,780 --> 00:22:01,480  
today we're good at well once you get

484  
00:22:05,220 --> 00:22:03,790  
back to when to get back to Australia

485  
00:22:07,710 --> 00:22:05,230  
and I get back to the United States but

486  
00:22:09,990 --> 00:22:07,720  
I know this stuff is out there yeah and

487  
00:22:11,820 --> 00:22:10,000  
I can't just take it off the web even if

488  
00:22:17,180 --> 00:22:11,830

I found it I have to have the permission

489

00:22:20,189 --> 00:22:17,190

of the person who owns it to upload it

490

00:22:22,139 --> 00:22:20,199

you know it's just too important it is

491

00:22:23,430 --> 00:22:22,149

it is it's very important so what are

492

00:22:26,849 --> 00:22:23,440

some of the highlights over the last

493

00:22:28,349 --> 00:22:26,859

couple of years with your work so what

494

00:22:29,639 --> 00:22:28,359

we're trying to do is encouraging people

495

00:22:31,589 --> 00:22:29,649

out there to get really interesting

496

00:22:33,479 --> 00:22:31,599

Susan so what are the some of the

497

00:22:35,549 --> 00:22:33,489

highlights so one of the things we've

498

00:22:37,969 --> 00:22:35,559

done recently is we have completely

499

00:22:42,799 --> 00:22:37,979

changed how we train it is all

500

00:22:45,989 --> 00:22:42,809

self-paced I am the trainer and we are

501  
00:22:48,689 --> 00:22:45,999  
existing on facebook in a secret hidden

502  
00:22:51,839 --> 00:22:48,699  
group where we it's called the secret

503  
00:22:53,519 --> 00:22:51,849  
cabal and once you join our training

504  
00:22:55,889 --> 00:22:53,529  
program you're put in the secret cabal

505  
00:22:57,809 --> 00:22:55,899  
with all the other editors and we learn

506  
00:22:59,579 --> 00:22:57,819  
from each other we discuss what we're

507  
00:23:02,159 --> 00:22:59,589  
doing we proof read each other's

508  
00:23:04,349 --> 00:23:02,169  
articles we help train each other

509  
00:23:07,859 --> 00:23:04,359  
suggestions it's just incredible it's a

510  
00:23:11,309 --> 00:23:07,869  
very powerful friendly encouraging

511  
00:23:13,319 --> 00:23:11,319  
environment then as I said we've changed

512  
00:23:15,989 --> 00:23:13,329  
training so that it's we're using google

513  
00:23:18,029 --> 00:23:15,999

documents it's self-paced people can do

514

00:23:20,549 --> 00:23:18,039

it at their own leisure and I will keep

515

00:23:21,899 --> 00:23:20,559

up with them as they edit so as they go

516

00:23:23,009 --> 00:23:21,909

through their assignments they report

517

00:23:24,629 --> 00:23:23,019

back to me and say I finish this

518

00:23:26,789 --> 00:23:24,639

assignment or whatever and I check it

519

00:23:29,339 --> 00:23:26,799

and we come we and we talked about it

520

00:23:31,169 --> 00:23:29,349

and we move on to the next one so you

521

00:23:32,609 --> 00:23:31,179

can watch all the videos and follow all

522

00:23:34,799 --> 00:23:32,619

the blogs and you can read everything

523

00:23:36,359 --> 00:23:34,809

you need to read and on your own time so

524

00:23:39,629 --> 00:23:36,369

it can take you weeks or months to

525

00:23:42,599 --> 00:23:39,639

finish and I think that the way we've

526

00:23:45,769 --> 00:23:42,609

set it up now is much less stress on me

527

00:23:48,749 --> 00:23:45,779

so you should assign everything yes and

528

00:23:50,729 --> 00:23:48,759

people are able to as I say do it in

529

00:23:56,309 --> 00:23:50,739

their own time and I this has been a

530

00:23:58,559 --> 00:23:56,319

skill this has been a boon we're putting

531

00:24:04,319 --> 00:23:58,569

more people through training now in a

532

00:24:06,449 --> 00:24:04,329

quicker way now do it to end up you've

533

00:24:08,609 --> 00:24:06,459

had your critics this what the guerrilla

534

00:24:11,729 --> 00:24:08,619

skepticism in wikipedia has had critics

535

00:24:14,219 --> 00:24:11,739

over the wall what's their beef the only

536

00:24:16,559 --> 00:24:14,229

critics we really have had are from the

537

00:24:19,099 --> 00:24:16,569

paranormal community they blame us for

538

00:24:23,609 --> 00:24:19,109

anything and everything that happens

539

00:24:27,299 --> 00:24:23,619

homeopaths the Brazil ski clinic Deepak

540

00:24:29,910 --> 00:24:27,309

Chopra Rupert sheldrick oh they hate us

541

00:24:33,060 --> 00:24:29,920

Oh natural news is written up Elise

542

00:24:38,400 --> 00:24:33,070

three articles on me saying that I on

543

00:24:39,750 --> 00:24:38,410

David Gorski are the bane of skepticism

544

00:24:41,940 --> 00:24:39,760

or something I don't know he they see

545

00:24:44,580 --> 00:24:41,950

they think he's in charge of the kurla

546

00:24:50,400 --> 00:24:44,590

skepticism oka PD project which is

547

00:24:54,480 --> 00:24:50,410

hilarious and uh and so yeah we're hated

548

00:24:56,910 --> 00:24:54,490

well I say we're endorsed by so many

549

00:24:58,710 --> 00:24:56,920

people because you know you're doing a

550

00:25:01,050 --> 00:24:58,720

darn good job whatever these people are

551

00:25:02,970 --> 00:25:01,060

attacking you and they really aren't

552

00:25:05,760 --> 00:25:02,980

even attacking us they write a blog they

553

00:25:07,140 --> 00:25:05,770

they get all huffed up about it and we

554

00:25:09,150 --> 00:25:07,150

haven't even done whatever it is they

555

00:25:10,740 --> 00:25:09,160

said they've done that we're doing that

556

00:25:13,080 --> 00:25:10,750

that's the most hilarious part that's

557

00:25:14,340 --> 00:25:13,090

not unusual they don't know how to check

558

00:25:15,810 --> 00:25:14,350

sources they don't know how to I mean

559

00:25:18,690 --> 00:25:15,820

everything is out there if they wanted

560

00:25:20,520 --> 00:25:18,700

to find out and really did really care

561

00:25:21,930 --> 00:25:20,530

they could find out it would take them

562

00:25:25,320 --> 00:25:21,940

maybe 20 minutes to figure this whole

563

00:25:27,420 --> 00:25:25,330

thing out who i am who everybody is what

564

00:25:29,100 --> 00:25:27,430

we're doing and they would be sadly

565

00:25:30,810 --> 00:25:29,110

disappointed because we really aren't

566

00:25:32,160 --> 00:25:30,820

doing the things that they think we are

567

00:25:33,810 --> 00:25:32,170

but we'll take the reputation because

568

00:25:36,090 --> 00:25:33,820

it's great well they'll be sadly

569

00:25:37,470 --> 00:25:36,100

disappointed when if they discover that

570

00:25:39,150 --> 00:25:37,480

we're not actually part of the

571

00:25:42,360 --> 00:25:39,160

illuminati or the conspiracy and we're

572

00:25:44,070 --> 00:25:42,370

not funded by whatever X corporate a big

573

00:25:48,210 --> 00:25:44,080

farmer at least or whatever X

574

00:25:52,260 --> 00:25:48,220

corporation we're not and sometimes I

575

00:25:54,360 --> 00:25:52,270

think damn that when I totally agree if

576

00:25:56,430 --> 00:25:54,370

we could only have the power that they

577

00:25:58,350 --> 00:25:56,440

think we have then I would you know we

578

00:26:00,990 --> 00:25:58,360

would roll before you would make what

579

00:26:03,030 --> 00:26:01,000

changes with it well if you can judge

580

00:26:05,070 --> 00:26:03,040

somebody by the caliber of their enemies

581

00:26:22,650 --> 00:26:05,080

Susan and you're a formidable person

582

00:26:25,350 --> 00:26:22,660

indeed thank you Richard and now direct

583

00:26:32,010 --> 00:26:25,360

from the cafe at Australia's science

584

00:26:36,270 --> 00:26:33,380

[Music]

585

00:26:39,420 --> 00:26:36,280

2016 we might not be able to set it on

586

00:26:41,700 --> 00:26:39,430

fire but boy are we glad it's over let's

587

00:26:45,030 --> 00:26:41,710

turn lemons into lemonade by looking to

588

00:26:47,370 --> 00:26:45,040

our one true love science here are our

589

00:26:51,810 --> 00:26:47,380

top three biggest science stories of

590

00:26:54,150 --> 00:26:51,820

2016 first up the Zika virus the disease

591

00:26:56,460 --> 00:26:54,160

has been around since the 40s but it was

592

00:26:58,140 --> 00:26:56,470

in February that the WHO declared a

593

00:27:01,590 --> 00:26:58,150

public health emergency of international

594

00:27:04,350 --> 00:27:01,600

concern between investigating sexual

595

00:27:05,930 --> 00:27:04,360

transmission and microcephaly and the

596

00:27:08,370 --> 00:27:05,940

risks associated with the Rio Olympics

597

00:27:11,160 --> 00:27:08,380

Zika was never going to stray far from

598

00:27:13,260 --> 00:27:11,170

the headlines but in a hobby update the

599

00:27:15,480 --> 00:27:13,270

virus was taken off the global emergency

600

00:27:18,270 --> 00:27:15,490

list last month and vaccine research is

601  
00:27:19,850 --> 00:27:18,280  
making headway and the second story that

602  
00:27:21,660 --> 00:27:19,860  
kept on catching our attention

603  
00:27:25,050 --> 00:27:21,670  
international cooperation on climate

604  
00:27:27,000 --> 00:27:25,060  
change exciting oh no but it really is

605  
00:27:29,820 --> 00:27:27,010  
amazing that the Paris agreement which

606  
00:27:32,760 --> 00:27:29,830  
was negotiated by 195 countries at the

607  
00:27:37,170 --> 00:27:32,770  
cop21 summer in 2015 came into effect in

608  
00:27:39,060 --> 00:27:37,180  
November and in October 197 countries

609  
00:27:41,510 --> 00:27:39,070  
agreed to update the Montreal Protocol

610  
00:27:43,950 --> 00:27:41,520  
banning emissions causing refrigerants

611  
00:27:46,410 --> 00:27:43,960  
let's finish up with flat out the

612  
00:27:49,230 --> 00:27:46,420  
universe is amazing and science rules

613  
00:27:52,110 --> 00:27:49,240

news we found evidence of gravitational

614

00:27:53,760 --> 00:27:52,120

waves three cheers for everyone at LIGO

615

00:27:56,930 --> 00:27:53,770

for observing the chirp and the data

616

00:27:59,790 --> 00:27:56,940

that proved Einstein's 1916 prediction

617

00:28:03,779 --> 00:27:59,800

gravitation causes space-time to ripple

618

00:28:06,210 --> 00:28:03,789

at the speed of light so that was 2016

619

00:28:08,639 --> 00:28:06,220

after all the ups and all the downs all

620

00:28:15,690 --> 00:28:08,649

we can say is be excellent to each other

621

00:28:17,789 --> 00:28:15,700

and 2017 we can't wait to meet you movie

622

00:28:20,159 --> 00:28:17,799

nerds like me the warmer weather means

623

00:28:22,560 --> 00:28:20,169

blockbusters on Boxing Day and Oscar

624

00:28:23,909 --> 00:28:22,570

bait in the new year but until i'm

625

00:28:25,680 --> 00:28:23,919

watching Chris Pratt and Jennifer

626  
00:28:28,320 --> 00:28:25,690  
Lawrence wake up early from graduating

627  
00:28:30,029 --> 00:28:28,330  
sleep on a massive spaceship I'll just

628  
00:28:32,879 --> 00:28:30,039  
need to reflect on the year in movie

629  
00:28:35,549 --> 00:28:32,889  
science that was let's start with the

630  
00:28:38,849 --> 00:28:35,559  
award for most unrealistic portrayal of

631  
00:28:41,639 --> 00:28:38,859  
a stem career in a 2016 film and it's

632  
00:28:44,820 --> 00:28:41,649  
Margot Robbie as Harley Quinn in Suicide

633  
00:28:47,869 --> 00:28:44,830  
Squad look once that baseball bat start

634  
00:28:50,279 --> 00:28:47,879  
swinging she is are amazing

635  
00:28:52,019 --> 00:28:50,289  
unfortunately she hasn't been a

636  
00:28:54,450 --> 00:28:52,029  
psychiatrist long enough to build up the

637  
00:28:56,249 --> 00:28:54,460  
level of experience necessary to treat

638  
00:28:59,099 --> 00:28:56,259

the severe issues that would land a

639

00:29:01,379 --> 00:28:59,109

patient in Arkham Asylum but the award

640

00:29:04,769 --> 00:29:01,389

for best scientist on screen in 2016

641

00:29:06,960 --> 00:29:04,779

goes to Amy Adams as dr. Louise thanks

642

00:29:09,119 --> 00:29:06,970

in a rival she doesn't just use her

643

00:29:11,129 --> 00:29:09,129

lingual skills to save the world she

644

00:29:12,869 --> 00:29:11,139

defends the scientific method and teams

645

00:29:15,599 --> 00:29:12,879

up with the theoretical physicist to

646

00:29:18,269 --> 00:29:15,609

talk to aliens she's come she's

647

00:29:20,279 --> 00:29:18,279

communicative and she works hard that's

648

00:29:25,950 --> 00:29:20,289

the kind of scientists I want to be when

649

00:29:28,859 --> 00:29:25,960

I grow up to quote the greatest human on

650

00:29:31,349 --> 00:29:28,869

the planet Beyonce da a little slate

651

00:29:32,839 --> 00:29:31,359

ain't never hurt nobody okay I never

652

00:29:36,659 --> 00:29:32,849

claimed she was the greatest of grammar

653

00:29:38,729 --> 00:29:36,669

anyway now nobody includes robots you

654

00:29:41,369 --> 00:29:38,739

see scientists in Japan we're building a

655

00:29:43,409 --> 00:29:41,379

humanoid robot named Hank or oh that was

656

00:29:46,589 --> 00:29:43,419

really bendy and flexible but also

657

00:29:49,169 --> 00:29:46,599

really strong this is taking a lot of

658

00:29:50,879 --> 00:29:49,179

motives which get really hot but don't

659

00:29:53,539 --> 00:29:50,889

leave much room for the usual cooling

660

00:29:57,779 --> 00:29:53,549

systems like fans or circulating coolant

661

00:30:00,119 --> 00:29:57,789

gamma hey but wait they thought you and

662

00:30:02,310 --> 00:30:00,129

I are really bendy and flexible and our

663

00:30:05,609 --> 00:30:02,320

muscles create heat which we reliev

664

00:30:08,310 --> 00:30:05,619

sweat Eureka they said and they all went

665

00:30:10,799 --> 00:30:08,320

out for sushi to celebrate okay probably

666

00:30:13,289 --> 00:30:10,809

not but they did met kangaroo a new

667

00:30:15,260 --> 00:30:13,299

porous aluminium frame using a process

668

00:30:17,720 --> 00:30:15,270

similar to 3d printing

669

00:30:19,670 --> 00:30:17,730

the spongy nature of this new skeleton

670

00:30:22,730 --> 00:30:19,680

allows water to seep onto its surface

671

00:30:25,160 --> 00:30:22,740

and evaporative cooling can go down so

672

00:30:27,620 --> 00:30:25,170

much that 11 minutes straight push ups

673

00:30:31,630 --> 00:30:27,630

is a breeze can't wait to see how many

674

00:30:35,000 --> 00:30:31,640

squats kangaroo can push out on leg day

675

00:30:50,120 --> 00:30:35,010

for more brouhaha and Australian science

676

00:30:52,130 --> 00:30:50,130

head for ww Australia science TV this

677

00:30:54,410 --> 00:30:52,140

December in California i'll be giving my

678

00:30:58,550 --> 00:30:54,420

talk strange energies and even stranger

679

00:31:01,700 --> 00:30:58,560

devices too good to be true on the 29th

680

00:31:03,500 --> 00:31:01,710

and the 30th of december the torque on

681

00:31:07,010 --> 00:31:03,510

the 29th december will be in berkeley

682

00:31:08,870 --> 00:31:07,020

and on the 30th in irvine my hosts for

683

00:31:11,570 --> 00:31:08,880

the berkeley event will be the bay area

684

00:31:17,330 --> 00:31:11,580

skeptics and my host in irvine will be

685

00:31:19,280 --> 00:31:17,340

the orange county science club for more

686

00:31:22,010 --> 00:31:19,290

information and to book your seat see

687

00:31:26,060 --> 00:31:22,020

the show notes linked to this episode of

688

00:31:37,250 --> 00:31:26,070

the skeptic zone i'm looking forward to

689

00:31:39,980 --> 00:31:37,260

seeing you in california i'm pleased to

690

00:31:41,510 --> 00:31:39,990

say that australia in many ways leads

691

00:31:45,680 --> 00:31:41,520

the world when it comes to things like

692

00:31:47,900 --> 00:31:45,690

cancer research now our guests reporter

693

00:31:50,690 --> 00:31:47,910

kevin davies interviews professor ross

694

00:31:52,490 --> 00:31:50,700

hannah head of the department of cancer

695

00:31:56,460 --> 00:31:52,500

biology and therapeutics at the John

696

00:31:59,230 --> 00:31:56,470

Curtin school of medical research

697

00:32:01,090 --> 00:31:59,240

i'm here at the John Curtin school of

698

00:32:03,039 --> 00:32:01,100

medical research at the anu and i'm

699

00:32:05,680 --> 00:32:03,049

speaking to professor ross henan

700

00:32:07,330 --> 00:32:05,690

pleasure to read it well tell us a

701  
00:32:09,519 --> 00:32:07,340  
little bit about the John Curtin school

702  
00:32:11,049 --> 00:32:09,529  
of medical research oh yes John Burns

703  
00:32:13,960 --> 00:32:11,059  
core medical research is one of the

704  
00:32:16,899 --> 00:32:13,970  
oldest research institutes dedicated

705  
00:32:19,180 --> 00:32:16,909  
just to experimental research that

706  
00:32:21,460 --> 00:32:19,190  
little teaching undergraduate a lot of

707  
00:32:25,539 --> 00:32:21,470  
postgraduate teaching and it was formed

708  
00:32:27,159 --> 00:32:25,549  
in 1946 to staff to the war obviously by

709  
00:32:29,529 --> 00:32:27,169  
john curtin lu that prime minister and

710  
00:32:31,090 --> 00:32:29,539  
was realized that we needed a day in

711  
00:32:33,489 --> 00:32:31,100  
advance medical research center in

712  
00:32:35,739 --> 00:32:33,499  
australia and tell us a little about

713  
00:32:37,450 --> 00:32:35,749

yourself what do you research what is

714

00:32:39,759 --> 00:32:37,460

your area of expertise so my background

715

00:32:41,289 --> 00:32:39,769

I spent the last 15 years of the job had

716

00:32:43,210 --> 00:32:41,299

to pick maccallum cancer center in

717

00:32:45,100 --> 00:32:43,220

normal which is Australia's only

718

00:32:47,980 --> 00:32:45,110

dedicated cancer hospital and I ran our

719

00:32:50,470 --> 00:32:47,990

large group there and I moved from there

720

00:32:52,539 --> 00:32:50,480

to John Curtin early last year to set up

721

00:32:55,269 --> 00:32:52,549

what is the first department of cancer

722

00:32:56,859 --> 00:32:55,279

in any university in australia so the

723

00:32:59,529 --> 00:32:56,869

new department is the first leader found

724

00:33:01,180 --> 00:32:59,539

in john curtin and over 20 years solely

725

00:33:03,129 --> 00:33:01,190

dedicated to cancer research should have

726

00:33:06,460 --> 00:33:03,139

pretty excited to have that focus and a

727

00:33:10,029 --> 00:33:06,470

critical mask and on the tour earlier

728

00:33:12,190 --> 00:33:10,039

today i got to see a new laboratory that

729

00:33:14,430 --> 00:33:12,200

was under construction that dealing with

730

00:33:17,619 --> 00:33:14,440

targeted medicines would you be able to

731

00:33:19,629 --> 00:33:17,629

this is a new high throughput screening

732

00:33:22,149 --> 00:33:19,639

facility and the goal of the screening

733

00:33:23,830 --> 00:33:22,159

facility is to be able to reduce the

734

00:33:26,259 --> 00:33:23,840

impossible to the possible so this

735

00:33:28,330 --> 00:33:26,269

facility which is run by robots and high

736

00:33:30,460 --> 00:33:28,340

tech high throughput microscopes and

737

00:33:33,999 --> 00:33:30,470

other sorts of facts analyzers can

738

00:33:36,909 --> 00:33:34,009

basically screen millions of drugs to

739

00:33:38,710 --> 00:33:36,919

find new targets for new types of cancer

740

00:33:40,389 --> 00:33:38,720

and it can do this in a real-time within

741

00:33:42,820 --> 00:33:40,399

weeks as opposed to something it would

742

00:33:44,379 --> 00:33:42,830

be a possible to do and not only doing

743

00:33:46,029 --> 00:33:44,389

screams small molecules to find new

744

00:33:48,340 --> 00:33:46,039

drugs we can take advantage of some

745

00:33:51,159 --> 00:33:48,350

really neat technologies out there like

746

00:33:54,549 --> 00:33:51,169

gene editing so one of these gene

747

00:33:56,520 --> 00:33:54,559

editing processes is a new technology

748

00:33:57,900 --> 00:33:56,530

for deleting individually genes

749

00:33:59,460 --> 00:33:57,910

the genome but now we can do that in

750

00:34:02,040 --> 00:33:59,470

heitz report that we can individually

751  
00:34:03,510 --> 00:34:02,050  
delete every gene and the genome and ask

752  
00:34:05,820 --> 00:34:03,520  
how it affects a certain process

753  
00:34:07,380 --> 00:34:05,830  
functional genomics in other words and

754  
00:34:09,659 --> 00:34:07,390  
how long do you think we'll start seeing

755  
00:34:12,510 --> 00:34:09,669  
these sort of drugs entering the

756  
00:34:14,430 --> 00:34:12,520  
mainstream to be here so the normal time

757  
00:34:16,710 --> 00:34:14,440  
it takes to develop a drug in industry

758  
00:34:18,510 --> 00:34:16,720  
is about ten years but that's because

759  
00:34:20,520 --> 00:34:18,520  
there's a lot of constraints of industry

760  
00:34:22,680 --> 00:34:20,530  
and how they do things in the university

761  
00:34:24,360 --> 00:34:22,690  
environment we can do that in three to

762  
00:34:26,340 --> 00:34:24,370  
five years we think it's a great

763  
00:34:28,880 --> 00:34:26,350

environment for doing things cheaper and

764

00:34:30,960 --> 00:34:28,890

faster than what often that takes

765

00:34:32,490 --> 00:34:30,970

industry a long time so we hope the

766

00:34:33,930 --> 00:34:32,500

screening facility we built in the end

767

00:34:35,909 --> 00:34:33,940

of the year here's a couple of months

768

00:34:37,710 --> 00:34:35,919

time we'll start doing a first

769

00:34:40,890 --> 00:34:37,720

experiments next year we hope to be

770

00:34:42,630 --> 00:34:40,900

finding molecules for the cancer therapy

771

00:34:44,640 --> 00:34:42,640

paralysis of immune problems probably

772

00:34:46,890 --> 00:34:44,650

within three 3 four years that's

773

00:34:50,130 --> 00:34:46,900

excellent I really do wish you the best

774

00:34:52,740 --> 00:34:50,140

of luck as I said unfortunately my

775

00:34:55,320 --> 00:34:52,750

father died of cancer and so I want I

776

00:34:57,360 --> 00:34:55,330

want you to get those drugs out there

777

00:34:58,680 --> 00:34:57,370

yeah if that's the real reason we're

778

00:35:01,080 --> 00:34:58,690

doing this is but as well we've done

779

00:35:02,460 --> 00:35:01,090

really well in certain cancers instead

780

00:35:04,380 --> 00:35:02,470

in childhood cancers is eighty percent

781

00:35:06,150 --> 00:35:04,390

survival rate to certain cancers like

782

00:35:08,730 --> 00:35:06,160

lung cancer which father passed away

783

00:35:10,890 --> 00:35:08,740

from cancer by prostate cancer we've

784

00:35:12,180 --> 00:35:10,900

really not made any differences in the

785

00:35:14,340 --> 00:35:12,190

last 20 years and these are really

786

00:35:15,930 --> 00:35:14,350

difficult cancers and we need to use the

787

00:35:17,880 --> 00:35:15,940

latest technology these high throughput

788

00:35:20,400 --> 00:35:17,890

mass attack approaches to try and find

789

00:35:23,430 --> 00:35:20,410

new therapies why are these cancers so

790

00:35:25,140 --> 00:35:23,440

much more difficult it's hard to say but

791

00:35:27,690 --> 00:35:25,150

with lung cancer as a cancer which has a

792

00:35:29,670 --> 00:35:27,700

really massive mutation rate because

793

00:35:31,740 --> 00:35:29,680

often its associated with smoking not

794

00:35:33,660 --> 00:35:31,750

always and smoking causes lots of

795

00:35:36,810 --> 00:35:33,670

mutations so these cancers have a high

796

00:35:38,700 --> 00:35:36,820

burden of mutation and so that cancer is

797

00:35:40,920 --> 00:35:38,710

a clonal disease if you have a drug

798

00:35:42,930 --> 00:35:40,930

which treats ninety percent of the souls

799

00:35:44,400 --> 00:35:42,940

you have ten percent of the cells which

800

00:35:45,930 --> 00:35:44,410

are left over which have a different

801  
00:35:48,240 --> 00:35:45,940  
mutation and they are resistant to

802  
00:35:50,190 --> 00:35:48,250  
disease and so the disease comes back

803  
00:35:51,870 --> 00:35:50,200  
again and then he treated with another

804  
00:35:54,150 --> 00:35:51,880  
drug you killed ninety percent of those

805  
00:35:55,620 --> 00:35:54,160  
cells that you still have ten percent of

806  
00:35:57,510 --> 00:35:55,630  
the ten percent left or they grow back

807  
00:35:58,980 --> 00:35:57,520  
again so you keep on clonely selecting

808  
00:36:01,260 --> 00:35:58,990  
out these different mutations it's

809  
00:36:03,910 --> 00:36:01,270  
really difficult other cancers only have

810  
00:36:06,769 --> 00:36:03,920  
five or ten mutations

811  
00:36:09,499 --> 00:36:06,779  
lung cancer has some of most high sperm

812  
00:36:11,719 --> 00:36:09,509  
the mutations a bit like melanoma skin

813  
00:36:13,459 --> 00:36:11,729

affected cancer we ever Sun causing

814

00:36:16,160 --> 00:36:13,469

these mutations once again melanoma is

815

00:36:18,920 --> 00:36:16,170

very difficult to treat now during the

816

00:36:20,870 --> 00:36:18,930

tour you mentioned that you were looking

817

00:36:23,839 --> 00:36:20,880

at safe places like the Great Barrier

818

00:36:26,059 --> 00:36:23,849

Reef for to try and find new drugs new

819

00:36:27,709 --> 00:36:26,069

compounds Keith please talk about that a

820

00:36:29,269 --> 00:36:27,719

little bit yeah look this is actually

821

00:36:30,709 --> 00:36:29,279

something which was tried many years ago

822

00:36:32,299 --> 00:36:30,719

by big drug companies and I didn't

823

00:36:34,160 --> 00:36:32,309

succeed very well this is taking natural

824

00:36:35,299 --> 00:36:34,170

compounds to find new drugs this is

825

00:36:37,279 --> 00:36:35,309

because they didn't have the right

826

00:36:39,079 --> 00:36:37,289

technology that I didn't have these

827

00:36:40,789 --> 00:36:39,089

functional screens that we have what we

828

00:36:43,609 --> 00:36:40,799

look at how a drug affects a process

829

00:36:45,910 --> 00:36:43,619

rather than individual molecule and so

830

00:36:47,900 --> 00:36:45,920

the idea of them is that nature produces

831

00:36:50,569 --> 00:36:47,910

millions and millions of different

832

00:36:52,400 --> 00:36:50,579

compounds and these evolved view of the

833

00:36:54,799 --> 00:36:52,410

organisms it could be a mosque it could

834

00:36:56,739 --> 00:36:54,809

be a spandrel could be a coral reef and

835

00:36:58,969 --> 00:36:56,749

so we know that these drugs have

836

00:37:00,650 --> 00:36:58,979

proteins and other factors they bind to

837

00:37:01,789 --> 00:37:00,660

you they have a function what we're

838

00:37:02,689 --> 00:37:01,799

trying to do is find out what their

839

00:37:04,430 --> 00:37:02,699

function is because it's like a

840

00:37:06,140 --> 00:37:04,440

lock-and-key they have been developed

841

00:37:07,430 --> 00:37:06,150

over these millions of years so they're

842

00:37:08,930 --> 00:37:07,440

highly efficient to binding these

843

00:37:10,999 --> 00:37:08,940

proteins so if we can pull these

844

00:37:12,650 --> 00:37:11,009

molecules out and find out what their

845

00:37:14,959 --> 00:37:12,660

function is we may find ones which you

846

00:37:16,279 --> 00:37:14,969

naturally say block cell growth or

847

00:37:17,989 --> 00:37:16,289

accelerate silver it's in the case of

848

00:37:20,150 --> 00:37:17,999

cancer some huge may block cell growth

849

00:37:22,640 --> 00:37:20,160

and so we want to go back and revisit

850

00:37:24,319 --> 00:37:22,650

Australia's key moments called so it's

851  
00:37:27,650 --> 00:37:24,329  
all these molecules which are produced

852  
00:37:30,170 --> 00:37:27,660  
by the bacteria by sponges are all sort

853  
00:37:31,819 --> 00:37:30,180  
of biological agents and we hope that we

854  
00:37:33,289 --> 00:37:31,829  
can go back and the advantage of these

855  
00:37:36,229 --> 00:37:33,299  
drugs as they're really complex

856  
00:37:37,609 --> 00:37:36,239  
molecules a lot of the libraries which

857  
00:37:39,259 --> 00:37:37,619  
people are terribly screening is

858  
00:37:41,599 --> 00:37:39,269  
synthetic libraries they're made by man

859  
00:37:43,160 --> 00:37:41,609  
they screen these man-made libraries to

860  
00:37:45,849 --> 00:37:43,170  
try and find a new small molecule that

861  
00:37:48,739 --> 00:37:45,859  
inhibit cancer because they're man-made

862  
00:37:51,769 --> 00:37:48,749  
they're simple it is very hard to make

863  
00:37:53,029 --> 00:37:51,779

really complex molecules whereas these

864

00:37:55,370 --> 00:37:53,039

drugs which were isolated from

865

00:37:57,349 --> 00:37:55,380

Australia's key moment very complex and

866

00:37:58,880 --> 00:37:57,359

if you look at fifty percent of all

867

00:38:00,410 --> 00:37:58,890

dragons are used in cancer they've

868

00:38:01,969 --> 00:38:00,420

actually come from naturally occurring

869

00:38:03,870 --> 00:38:01,979

compounds everything is a good area to

870

00:38:06,749 --> 00:38:03,880

go back and harvest

871

00:38:09,150 --> 00:38:06,759

now how many researchers do you have in

872

00:38:12,329 --> 00:38:09,160

the school here so the John Curtin be

873

00:38:14,450 --> 00:38:12,339

about 380 to 400 people in total of that

874

00:38:17,460 --> 00:38:14,460

probably 300 those will be dedicated to

875

00:38:18,960 --> 00:38:17,470

research right through from basic

876

00:38:21,720 --> 00:38:18,970

fundamental research through T

877

00:38:24,059 --> 00:38:21,730

preclinical uneven clinical at work will

878

00:38:25,859 --> 00:38:24,069

be putting drugs into human beings now I

879

00:38:28,079 --> 00:38:25,869

noticed before we were in the Jackie

880

00:38:30,059 --> 00:38:28,089

Chan science center can you explain a

881

00:38:32,099 --> 00:38:30,069

little bit more about the link yes in

882

00:38:33,809 --> 00:38:32,109

the Jackie Chan I'm not completely over

883

00:38:35,190 --> 00:38:33,819

that one but i'm pretty sure that jackie

884

00:38:36,720 --> 00:38:35,200

chan's mother used to live here and she

885

00:38:38,849 --> 00:38:36,730

was treated in the local hospital and so

886

00:38:41,420 --> 00:38:38,859

that was a donation to long as they help

887

00:38:44,279 --> 00:38:41,430

the local people here gave his mother

888

00:38:45,779 --> 00:38:44,289

fantastic fantastic this is part of

889

00:38:47,430 --> 00:38:45,789

these donations from the people like

890

00:38:49,829 --> 00:38:47,440

that make the big difference nice having

891

00:38:51,599 --> 00:38:49,839

fantastic pieces of equipment well this

892

00:38:54,329 --> 00:38:51,609

is you know this is a big deal it's an

893

00:38:56,130 --> 00:38:54,339

arms race resist those people that have

894

00:38:57,390 --> 00:38:56,140

the best toys win that partners race and

895

00:38:59,299 --> 00:38:57,400

so we need to be able to compete with

896

00:39:01,620 --> 00:38:59,309

America with UK with the best equipment

897

00:39:03,150 --> 00:39:01,630

and so people that donate money like

898

00:39:05,849 --> 00:39:03,160

that as we can enable this device them

899

00:39:07,710 --> 00:39:05,859

as best equipment you're saying there's

900

00:39:09,749 --> 00:39:07,720

about a three year turnaround for

901  
00:39:11,430 --> 00:39:09,759  
technology is that getting shorter and

902  
00:39:13,620 --> 00:39:11,440  
shorter yeah it is we're finding that

903  
00:39:16,289 --> 00:39:13,630  
the new devices for sequencing genes to

904  
00:39:17,609 --> 00:39:16,299  
discover mutations right you know the

905  
00:39:20,009 --> 00:39:17,619  
machine that we've all three years ago

906  
00:39:22,140 --> 00:39:20,019  
as outdated is a much better machine now

907  
00:39:24,779 --> 00:39:22,150  
which can sequence faster figure reads

908  
00:39:27,150 --> 00:39:24,789  
and so you know you have to keep on

909  
00:39:28,380 --> 00:39:27,160  
finding the money to buy the new latest

910  
00:39:30,180 --> 00:39:28,390  
technologies that's where the new

911  
00:39:32,609 --> 00:39:30,190  
discoveries or comfortable sound with

912  
00:39:34,970 --> 00:39:32,619  
microscopes and the microscopes but the

913  
00:39:38,009 --> 00:39:34,980

new technology for visualizing cells is

914

00:39:39,420 --> 00:39:38,019

accelerating all through 22 to physics

915

00:39:42,870 --> 00:39:39,430

and maths and then better sort of

916

00:39:44,759 --> 00:39:42,880

knowledge so it's clearly an area where

917

00:39:46,440 --> 00:39:44,769

you have to somehow compete with these

918

00:39:48,210 --> 00:39:46,450

products which go out of date very

919

00:39:49,499 --> 00:39:48,220

quickly this expensive business as you

920

00:39:51,180 --> 00:39:49,509

can imagine yeah I guess one of the

921

00:39:53,940 --> 00:39:51,190

really good things about particularly

922

00:39:55,349 --> 00:39:53,950

the ANU University it's a hub for people

923

00:39:56,570 --> 00:39:55,359

from all over the world so they come to

924

00:39:58,970 --> 00:39:56,580

and so

925

00:40:01,400 --> 00:39:58,980

laboratory about fifty percent of the

926

00:40:05,140 --> 00:40:01,410

staff but not born in Australia some

927

00:40:09,590 --> 00:40:05,150

have come out from Asia from UK Germany

928

00:40:11,480 --> 00:40:09,600

South America Canada to do maybe an

929

00:40:12,740 --> 00:40:11,490

undergraduate degree or to do a PhD here

930

00:40:14,120 --> 00:40:12,750

or some of the company to do their

931

00:40:15,680 --> 00:40:14,130

postdoctoral research because they're

932

00:40:17,270 --> 00:40:15,690

looking for a really good laboratory in

933

00:40:19,190 --> 00:40:17,280

this case it's a cancer research

934

00:40:21,170 --> 00:40:19,200

laboratory so we have a really diverse

935

00:40:22,550 --> 00:40:21,180

for the people which is I think it's

936

00:40:23,660 --> 00:40:22,560

fantastic because it people from

937

00:40:25,430 --> 00:40:23,670

different backgrounds have different

938

00:40:26,710 --> 00:40:25,440

ways of thinking to be surprising how

939

00:40:28,340 --> 00:40:26,720

different ways that you can actually

940

00:40:31,400 --> 00:40:28,350

synergize when they get them together

941

00:40:33,530 --> 00:40:31,410

little large bit okay thank you very

942

00:40:51,560 --> 00:40:33,540

much professor Ross Hannon my pleasure

943

00:40:54,530 --> 00:40:51,570

thank you amazing news for supporters of

944

00:40:58,280 --> 00:40:54,540

maynard calm today you and Maynard's

945

00:41:03,140 --> 00:40:58,290

podcasts you are entitled yes you you

946

00:41:06,230 --> 00:41:03,150

are entitled to download the 2017 main

947

00:41:09,050 --> 00:41:06,240

are the calendar be the first person on

948

00:41:11,780 --> 00:41:09,060

your block and your city perhaps even

949

00:41:14,990 --> 00:41:11,790

your country to own the 2017 maynard

950

00:41:18,590 --> 00:41:15,000

calendar yes spend every month with me

951  
00:41:22,070 --> 00:41:18,600  
nerd for more information visit [www a](http://www.a)

952  
00:41:26,020 --> 00:41:22,080  
calm day you and send may not a message

953  
00:41:29,000 --> 00:41:26,030  
asking about your 2017 maynard

954  
00:41:44,630 --> 00:41:29,010  
downloadable printable calendar

955  
00:41:48,779 --> 00:41:47,220  
thank you for listening to the skeptic

956  
00:41:52,349 --> 00:41:48,789  
zone next week the skeptic zone

957  
00:41:54,930 --> 00:41:52,359  
Christmas special well it's a skeptic

958  
00:41:57,539 --> 00:41:54,940  
zone on Christmas whether it's special

959  
00:41:59,460 --> 00:41:57,549  
or not I don't know I hope so I catch up

960  
00:42:01,890 --> 00:41:59,470  
with me nod and have a chat to him about

961  
00:42:04,079 --> 00:42:01,900  
Christmas more from the New Zealand

962  
00:42:07,349 --> 00:42:04,089  
convention where I catch up with my old

963  
00:42:10,470 --> 00:42:07,359

friend Loretta Marin the jelly bean lady

964

00:42:14,190 --> 00:42:10,480

and she's going to be chatting about the

965

00:42:16,319 --> 00:42:14,200

ongoing success of friends of science in

966

00:42:18,809 --> 00:42:16,329

medicine what a wonderful outfit they

967

00:42:21,990 --> 00:42:18,819

are scoring victories for reason in

968

00:42:25,529 --> 00:42:22,000

Australia and inspiring people around

969

00:42:27,990 --> 00:42:25,539

the world I imagine we might have a an

970

00:42:29,579 --> 00:42:28,000

interview with a sea lion here in San

971

00:42:32,130 --> 00:42:29,589

Francisco or something like that I don't

972

00:42:35,430 --> 00:42:32,140

know I have to explore see what I can

973

00:42:38,519 --> 00:42:35,440

find and a big shout-out to Henrietta

974

00:42:41,880 --> 00:42:38,529

and more the skeptics own cats I hope

975

00:42:43,859 --> 00:42:41,890

you're doing okay in in Sydney and a big

976  
00:42:46,260 --> 00:42:43,869  
shout out to Mandrake the new skeptic

977  
00:42:48,210 --> 00:42:46,270  
zone kitten up there with Joe alabaster

978  
00:42:50,069 --> 00:42:48,220  
in the mountains and if you've got a

979  
00:42:52,380 --> 00:42:50,079  
little cat or kitten a big shout out to

980  
00:42:54,750 --> 00:42:52,390  
your cat or kitten they quite turn

981  
00:42:57,569 --> 00:42:54,760  
there's something about cats I used to

982  
00:42:59,609 --> 00:42:57,579  
be a dog person but now I cat person cat

983  
00:43:02,279 --> 00:42:59,619  
people will know what I mean enough

984  
00:43:04,799 --> 00:43:02,289  
about pets for this week this is Richard

985  
00:43:11,519 --> 00:43:04,809  
Saunders signing off from the Bay Area

986  
00:43:13,799 --> 00:43:11,529  
San Francisco you've been listening to

987  
00:43:17,339 --> 00:43:13,809  
the skeptics own podcast visit our

988  
00:43:19,920 --> 00:43:17,349

website at wwc a petting zoo TV for

989

00:43:23,970 --> 00:43:19,930

contacts an archive of all episodes

990

00:43:26,130 --> 00:43:23,980

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00:43:29,460 --> 00:43:26,140

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00:43:37,470 --> 00:43:34,809

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00:43:40,589 --> 00:43:37,480

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996

00:43:42,550 --> 00:43:40,599

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997

00:43:44,650 --> 00:43:42,560

zone is an independent production

998

00:43:46,720 --> 00:43:44,660

the views and opinions expressed on the

999

00:43:49,410 --> 00:43:46,730

skeptic zone and not necessarily those

1000

00:43:51,600 --> 00:43:49,420

of Australian skeptically or any other

