



**The Skeptic Zone
Show 130
15 April 2011**

**Associate Professor
Colin Waters**

1
00:00:23,290 --> 00:00:09,080
welcome to the skeptic zone the podcast

2
00:00:32,209 --> 00:00:27,790
yes it's the skeptic zone episode number

3
00:00:33,920 --> 00:00:32,219
134 the 15th of april 2011 Richard

4
00:00:36,620 --> 00:00:33,930
Saunders here with you from Sydney

5
00:00:42,400 --> 00:00:36,630
Australia now let's have a look at

6
00:00:48,520 --> 00:00:42,410
meijer my script here for today's show

7
00:00:52,760 --> 00:00:48,530
it says we have a story on harp harp ah

8
00:00:54,979 --> 00:00:52,770
harp over-the-horizon radar systems and

9
00:00:57,380 --> 00:00:54,989
high-altitude atmospheric research

10
00:00:58,700 --> 00:00:57,390
projects ooh that sounds like

11
00:01:01,939 --> 00:00:58,710
interesting stuff you know some people

12
00:01:04,009 --> 00:01:01,949
think that by scientists zapping things

13
00:01:05,600 --> 00:01:04,019

up into the ionosphere in the

14

00:01:09,289 --> 00:01:05,610

stratosphere in the hemisphere and all

15

00:01:12,380 --> 00:01:09,299

the spheres that humans are responsible

16

00:01:16,670 --> 00:01:12,390

for weather control and even things like

17

00:01:19,190 --> 00:01:16,680

the Japanese tsunami hmm i don't think

18

00:01:21,440 --> 00:01:19,200

so anyway today Maynard Maynard will

19

00:01:24,140 --> 00:01:21,450

interview associate professor Colin

20

00:01:27,590 --> 00:01:24,150

waters from the center for space physics

21

00:01:30,890 --> 00:01:27,600

at the University of Newcastle all about

22

00:01:32,719 --> 00:01:30,900

this over-the-horizon radar and the

23

00:01:36,460 --> 00:01:32,729

high-altitude atmospheric research

24

00:01:38,749 --> 00:01:36,470

project look out conspiracy theorists

25

00:01:41,810 --> 00:01:38,759

following that we have a report from our

26

00:01:45,530 --> 00:01:41,820

good friend and us correspondent travis

27

00:01:49,580 --> 00:01:45,540

roy from the Granite State skeptics he

28

00:01:51,649 --> 00:01:49,590

went along lucky guy that he is he went

29

00:01:55,039 --> 00:01:51,659

along to the northeast conference on

30

00:02:03,950 --> 00:01:55,049

science and skepticism known as Nexus or

31

00:02:06,399 --> 00:02:03,960

nice need Nick's yep that and met so

32

00:02:09,440 --> 00:02:06,409

many great people and more importantly

33

00:02:12,199 --> 00:02:09,450

interviewed some really fantastic people

34

00:02:13,370 --> 00:02:12,209

starting off of George rub then Brian

35

00:02:16,310 --> 00:02:13,380

Dunning

36

00:02:18,620 --> 00:02:16,320

and Jeannie Scott Eugenie Scott what a

37

00:02:21,320 --> 00:02:18,630

lineup that's coming up a little later

38

00:02:23,360 --> 00:02:21,330

on in the show and to wrap up the show

39

00:02:26,930 --> 00:02:23,370

we've got a report that went to air here

40

00:02:29,990 --> 00:02:26,940

in Australia in Adelaide the Today

41

00:02:33,050 --> 00:02:30,000

Tonight program on channel 7 ran a story

42

00:02:35,270 --> 00:02:33,060

are somewhat critical about homeopathy

43

00:02:38,420 --> 00:02:35,280

now I wonder if that's something to do

44

00:02:41,090 --> 00:02:38,430

with the lengthy email i sent them about

45

00:02:44,840 --> 00:02:41,100

the topic and why i actually end up on

46

00:02:46,490 --> 00:02:44,850

the report hmm listen to the report its

47

00:02:48,620 --> 00:02:46,500

offer video but you don't need the

48

00:02:51,530 --> 00:02:48,630

pictures i think you'll get it they talk

49

00:02:53,890 --> 00:02:51,540

to such people as well myself and Simon

50

00:02:56,210 --> 00:02:53,900

Singh and a few other people but listen

51
00:02:58,840 --> 00:02:56,220
when it comes on I want you to pay

52
00:03:01,210 --> 00:02:58,850
particular attention to what the

53
00:03:03,980 --> 00:03:01,220
representative of the homeopathic

54
00:03:07,520 --> 00:03:03,990
industry has to say and her

55
00:03:10,280 --> 00:03:07,530
justifications there are there just a

56
00:03:13,280 --> 00:03:10,290
classic well that's enough from me sit

57
00:03:31,520 --> 00:03:13,290
back grab that lovely ice-cold

58
00:03:39,710 --> 00:03:36,720
here's may not spooky action at the

59
00:03:43,470 --> 00:03:42,180
well yeah I was in the office of the day

60
00:03:45,570 --> 00:03:43,480
and someone come up to me and they said

61
00:03:47,670 --> 00:03:45,580
Maynard we need to know more about the

62
00:03:50,790 --> 00:03:47,680
high-altitude atmospheric research

63
00:03:52,140 --> 00:03:50,800

project harp as it's called now as it

64

00:03:53,880 --> 00:03:52,150

would be we have someone at Newcastle

65

00:03:56,010 --> 00:03:53,890

University who has worked on that Anna's

66

00:03:57,630 --> 00:03:56,020

worked on versions of similar things in

67

00:03:59,490 --> 00:03:57,640

Australia and by the way we're at the

68

00:04:01,260 --> 00:03:59,500

pointy end of the theory and the

69

00:04:02,640 --> 00:04:01,270

technology here too so we're going to

70

00:04:05,040 --> 00:04:02,650

have to ask someone who really knows and

71

00:04:06,990 --> 00:04:05,050

he does know associate professor Colin

72

00:04:09,630 --> 00:04:07,000

waters University of Newcastle whinnies

73

00:04:12,030 --> 00:04:09,640

office oh it's great to be here and it's

74

00:04:13,410 --> 00:04:12,040

very confusing to be here I've got a now

75

00:04:14,760 --> 00:04:13,420

by the way what is that stuff on your

76

00:04:16,920 --> 00:04:14,770

whiteboard there by the way it looks

77

00:04:20,130 --> 00:04:16,930

exactly like you would expect in a

78

00:04:22,800 --> 00:04:20,140

physics office yeah so then have you

79

00:04:24,480 --> 00:04:22,810

solved something well yeah that where

80

00:04:26,850 --> 00:04:24,490

the plans for some of our research

81

00:04:30,300 --> 00:04:26,860

there's a picture up there of the

82

00:04:32,310 --> 00:04:30,310

ionosphere and radars and ionosphere

83

00:04:35,040 --> 00:04:32,320

heaters and then over on the right there

84

00:04:36,690 --> 00:04:35,050

there's a whole set of steps that we

85

00:04:40,170 --> 00:04:36,700

need to do to do some of our computer

86

00:04:42,260 --> 00:04:40,180

simulations just before we get on what

87

00:04:44,970 --> 00:04:42,270

drew you to physics in the first place

88

00:04:48,240 --> 00:04:44,980

what why why is that your specialty I

89

00:04:52,350 --> 00:04:48,250

guess a high school teacher high school

90

00:04:55,740 --> 00:04:52,360

physics teacher expressed the the

91

00:04:57,960 --> 00:04:55,750

physics in a way I understood and got me

92

00:04:59,370 --> 00:04:57,970

interested and excited about it so I

93

00:05:03,420 --> 00:04:59,380

just continued on from the high school

94

00:05:06,180 --> 00:05:03,430

into into university and became involved

95

00:05:09,030 --> 00:05:06,190

in the space physics side with the group

96

00:05:11,250 --> 00:05:09,040

here at Newcastle and found yourself

97

00:05:13,470 --> 00:05:11,260

working on the with the North American

98

00:05:15,690 --> 00:05:13,480

Harper ray for a while now what are they

99

00:05:16,920 --> 00:05:15,700

doing there because a lot of people get

100

00:05:18,330 --> 00:05:16,930

confused about what they're doing but

101
00:05:20,850 --> 00:05:18,340
you've actually been there you've done

102
00:05:23,460 --> 00:05:20,860
it so you can tell us yeah yeah so the

103
00:05:26,040 --> 00:05:23,470
harp system is in Alaska and it's

104
00:05:28,020 --> 00:05:26,050
basically used for an aspheric basic an

105
00:05:30,830 --> 00:05:28,030
aspheric research I have a

106
00:05:33,120 --> 00:05:30,840
radiofrequency transmitter array

107
00:05:34,920 --> 00:05:33,130
consistently of prosti Paula antennas

108
00:05:38,220 --> 00:05:34,930
and it operates between 2 and 10

109
00:05:40,380 --> 00:05:38,230
megahertz and the reason why it operates

110
00:05:42,030 --> 00:05:40,390
at those frequencies is so that they can

111
00:05:44,820 --> 00:05:42,040
deposit the radio energy in the

112
00:05:47,690 --> 00:05:44,830
ionosphere at an altitude of two to

113
00:05:50,540 --> 00:05:47,700

three hundred kilometers from Earth and

114

00:05:52,430 --> 00:05:50,550

when they do that are they doing it for

115

00:05:54,470 --> 00:05:52,440

weather prediction

116

00:05:55,730 --> 00:05:54,480

doing it for communication reasons or

117

00:05:58,520 --> 00:05:55,740

they're doing it for over-the-horizon

118

00:06:01,100 --> 00:05:58,530

radar exactly what are they doing it for

119

00:06:03,320 --> 00:06:01,110

ya so most of it is just pure research

120

00:06:06,770 --> 00:06:03,330

in an aspheric physics and how the

121

00:06:10,100 --> 00:06:06,780

honesty behaves and it has spin-offs in

122

00:06:12,950 --> 00:06:10,110

the communications industry hf radio

123

00:06:15,680 --> 00:06:12,960

propagation was very popular in the past

124

00:06:17,480 --> 00:06:15,690

and nowadays most of the communications

125

00:06:20,420 --> 00:06:17,490

done with satellite and mobile phones

126

00:06:22,460 --> 00:06:20,430

are now satellite but some of the

127

00:06:26,960 --> 00:06:22,470

defence people have now realized that

128

00:06:29,840 --> 00:06:26,970

the hf propagation technology is coming

129

00:06:31,640 --> 00:06:29,850

back in to be more important because a

130

00:06:34,100 --> 00:06:31,650

lot of the satellite communications in

131

00:06:36,620 --> 00:06:34,110

defence now go onto the internet which

132

00:06:38,750 --> 00:06:36,630

is not necessarily all that secure hmm

133

00:06:42,020 --> 00:06:38,760

so the defense guys are now starting to

134

00:06:44,480 --> 00:06:42,030

use HF comms more morally especially in

135

00:06:46,640 --> 00:06:44,490

Canada in the northern part of America

136

00:06:47,930 --> 00:06:46,650

yes just but people think why they're

137

00:06:49,370 --> 00:06:47,940

pumping all this power up into the

138

00:06:51,050 --> 00:06:49,380

atmosphere it must have been having some

139

00:06:53,030 --> 00:06:51,060

effects somewhere on something this is

140

00:06:54,770 --> 00:06:53,040

where you you're out their theories come

141

00:06:56,960 --> 00:06:54,780

in how much power do they pump up there

142

00:06:59,180 --> 00:06:56,970

so with HAARP you're talking about three

143

00:07:00,680 --> 00:06:59,190

three-and-a-half megawatts the sort of

144

00:07:02,300 --> 00:07:00,690

energy that's actually getting deposited

145

00:07:04,970 --> 00:07:02,310

in the ionosphere though I was only

146

00:07:06,380 --> 00:07:04,980

microwatts per square meter which is of

147

00:07:08,150 --> 00:07:06,390

the order of a million times less than

148

00:07:10,220 --> 00:07:08,160

the sort of energy that's going into the

149

00:07:13,070 --> 00:07:10,230

honest here just from natural solar

150

00:07:14,750 --> 00:07:13,080

solar processes and why do you think

151
00:07:16,520 --> 00:07:14,760
people have developed theories about it

152
00:07:18,680 --> 00:07:16,530
is because the actual science of it is

153
00:07:20,500 --> 00:07:18,690
pretty hard to grasp yeah it's difficult

154
00:07:22,730 --> 00:07:20,510
for me to understand why people

155
00:07:25,550 --> 00:07:22,740
generated some of these funny ideas

156
00:07:28,640 --> 00:07:25,560
coming from a radio and ionosphere

157
00:07:31,490 --> 00:07:28,650
physics background you're not heeding

158
00:07:33,140 --> 00:07:31,500
the ionosphere to to the level of

159
00:07:36,100 --> 00:07:33,150
punching holes in or anything like that

160
00:07:38,750 --> 00:07:36,110
all you're doing is just stirring up the

161
00:07:41,840 --> 00:07:38,760
components the ionized gas in the

162
00:07:44,270 --> 00:07:41,850
ionosphere in order to study just the

163
00:07:46,280 --> 00:07:44,280

basic physical processes what's going on

164

00:07:48,650 --> 00:07:46,290

and there are joint research projects

165

00:07:52,730 --> 00:07:48,660

with HAARP and over the rise and radar

166

00:07:54,800 --> 00:07:52,740

systems so that slightly heating the

167

00:07:56,420 --> 00:07:54,810

ionosphere at a certain altitude will

168

00:07:59,600 --> 00:07:56,430

light up a section of the ionosphere

169

00:08:01,279 --> 00:07:59,610

that makes it easier to study using an

170

00:08:03,170 --> 00:08:01,289

over the rosen radar coming in over the

171

00:08:05,900 --> 00:08:03,180

top we have

172

00:08:07,939 --> 00:08:05,910

a couple of systems here in Australia

173

00:08:10,670 --> 00:08:07,949

over the rise and radar systems that are

174

00:08:13,100 --> 00:08:10,680

part of an international network they're

175

00:08:17,570 --> 00:08:13,110

very low power their effective radiated

176

00:08:19,969 --> 00:08:17,580

powers around 12 to 15 watts and there's

177

00:08:22,279 --> 00:08:19,979

one located in Tasmania and one located

178

00:08:25,520 --> 00:08:22,289

in New Zealand we are building one in

179

00:08:29,659 --> 00:08:25,530

Adelaide and we do have plans for

180

00:08:31,779 --> 00:08:29,669

putting one at Williamstown these radar

181

00:08:36,260 --> 00:08:31,789

systems are for purim aspheric research

182

00:08:39,110 --> 00:08:36,270

they study in conjunction with the 24

183

00:08:43,130 --> 00:08:39,120

other international radars basic honors

184

00:08:44,990 --> 00:08:43,140

for plasma physics and the perturbations

185

00:08:47,480 --> 00:08:45,000

in the atmosphere that we need to

186

00:08:49,490 --> 00:08:47,490

understand if we want to improve our

187

00:08:51,710 --> 00:08:49,500

communication systems if we want to

188

00:08:55,460 --> 00:08:51,720

understand what the honest feed us the

189

00:08:59,269 --> 00:08:55,470

GPS signals and errors in positioning

190

00:09:01,940 --> 00:08:59,279

for GPS and things like that now it's

191

00:09:03,740 --> 00:09:01,950

been going on since the 80s I would

192

00:09:04,910 --> 00:09:03,750

imagine that'd be fairly advanced or

193

00:09:07,100 --> 00:09:04,920

we're still in the early stages of

194

00:09:10,579 --> 00:09:07,110

learning well we've made a lot of

195

00:09:13,160 --> 00:09:10,589

progress since the 1980s for example

196

00:09:15,320 --> 00:09:13,170

most of our research radars are pointed

197

00:09:18,140 --> 00:09:15,330

towards the auroral zones and we've

198

00:09:21,710 --> 00:09:18,150

discovered some new I'm aspheric

199

00:09:25,010 --> 00:09:21,720

features near the auroral zones in terms

200

00:09:26,930 --> 00:09:25,020

of having the ionized gas of the

201
00:09:29,030 --> 00:09:26,940
honestly we call the plasma where it

202
00:09:32,060 --> 00:09:29,040
goes how it responds to different levels

203
00:09:34,160 --> 00:09:32,070
of solar activity and now the radars in

204
00:09:37,010 --> 00:09:34,170
the international scene is starting to

205
00:09:40,240 --> 00:09:37,020
be located more equator wood and we've

206
00:09:43,040 --> 00:09:40,250
discovered that the mid-latitude region

207
00:09:46,250 --> 00:09:43,050
used to be considered to be very quiet

208
00:09:47,510 --> 00:09:46,260
and dull and boring but some recent

209
00:09:49,699 --> 00:09:47,520
research has shown that that's not the

210
00:09:51,920 --> 00:09:49,709
case I just people at home what exactly

211
00:09:53,210 --> 00:09:51,930
is the the mid-latitude region because

212
00:09:55,130 --> 00:09:53,220
some I would thought that would mean the

213
00:09:57,829 --> 00:09:55,140

equator if you look at the earth as a

214

00:10:00,079 --> 00:09:57,839

sphere and the equatorial region

215

00:10:02,510 --> 00:10:00,089

obviously near the equator and there are

216

00:10:04,760 --> 00:10:02,520

various an aspheric processes that are

217

00:10:06,560 --> 00:10:04,770

unique to that region so you're talking

218

00:10:09,530 --> 00:10:06,570

about somewhere from the equator down to

219

00:10:11,870 --> 00:10:09,540

the top of Cape York that sort of band

220

00:10:14,679 --> 00:10:11,880

around the earth and then the

221

00:10:17,720 --> 00:10:14,689

high-latitude region is the auroral zone

222

00:10:21,619 --> 00:10:17,730

so you're looking from the pole to a

223

00:10:24,289 --> 00:10:21,629

latitude of 60 65 degrees so between

224

00:10:26,119 --> 00:10:24,299

that high-latitude regions of about 60

225

00:10:28,699 --> 00:10:26,129

degrees down to roundabout where

226

00:10:32,239 --> 00:10:28,709

Queensland is is mid latitude so there's

227

00:10:34,749 --> 00:10:32,249

three broad regions artists for physics

228

00:10:37,699 --> 00:10:34,759

that now you mentioned that will have

229

00:10:39,650 --> 00:10:37,709

benefits from GPS benefits EE

230

00:10:41,090 --> 00:10:39,660

communication benefits but there's also

231

00:10:43,009 --> 00:10:41,100

benefit to the country of actually

232

00:10:44,600 --> 00:10:43,019

having people that are trained in being

233

00:10:46,280 --> 00:10:44,610

able to do this because this is the

234

00:10:47,989 --> 00:10:46,290

high-tech stuff that we don't do a lot

235

00:10:49,519 --> 00:10:47,999

of in Australia is that correct yes

236

00:10:51,379 --> 00:10:49,529

that's true it's important to have

237

00:10:54,079 --> 00:10:51,389

personnel trained in this sort of area

238

00:10:55,340 --> 00:10:54,089

and knowledge because of the the defense

239

00:10:58,429 --> 00:10:55,350

applications that we have here in

240

00:11:00,109 --> 00:10:58,439

Australia the apartment of Defense rely

241

00:11:02,269 --> 00:11:00,119

very heavily on to half of the rise and

242

00:11:04,579 --> 00:11:02,279

radar technology with their jawn system

243

00:11:06,919 --> 00:11:04,589

and they rely on the universities to

244

00:11:08,689 --> 00:11:06,929

feed qualified personnel through now do

245

00:11:10,669 --> 00:11:08,699

you think there's a big future for this

246

00:11:12,350 --> 00:11:10,679

because it's an expensive thing and

247

00:11:13,879 --> 00:11:12,360

there's a lot of people competing for

248

00:11:16,879 --> 00:11:13,889

funding how difficult is it to get it

249

00:11:18,259 --> 00:11:16,889

going well here at Newcastle we've been

250

00:11:21,619 --> 00:11:18,269

doing this sort of research since the

251
00:11:24,559 --> 00:11:21,629
mid-1960s so our group here has been

252
00:11:26,509 --> 00:11:24,569
going for quite some time we have a lot

253
00:11:31,840 --> 00:11:26,519
of international collaborations going

254
00:11:34,100 --> 00:11:31,850
with the UK Canada the US and the French

255
00:11:37,609 --> 00:11:34,110
and there's a group in New Zealand we

256
00:11:39,289 --> 00:11:37,619
work with and so on in terms of funding

257
00:11:41,299 --> 00:11:39,299
our main source of funding comes from

258
00:11:43,579 --> 00:11:41,309
the Australian Government with a RC

259
00:11:47,059 --> 00:11:43,589
grants and so on so we rely very heavily

260
00:11:49,369 --> 00:11:47,069
on those and as someone who knows the

261
00:11:51,439 --> 00:11:49,379
area inside-out is a bit frustrating

262
00:11:52,669 --> 00:11:51,449
that the layman get really worried just

263
00:11:54,379 --> 00:11:52,679

they hit terms like hitting the

264

00:11:57,019 --> 00:11:54,389

ionosphere they hear that you know the

265

00:11:58,069 --> 00:11:57,029

American defense department's into it

266

00:12:01,879 --> 00:11:58,079

that kind of thing and they think that

267

00:12:04,100 --> 00:12:01,889

there's something wacky going on how can

268

00:12:05,479 --> 00:12:04,110

you allow those fears because you've

269

00:12:07,069 --> 00:12:05,489

been there you've been to the harp array

270

00:12:08,479 --> 00:12:07,079

and you're doing it here in Australia

271

00:12:11,030 --> 00:12:08,489

and we haven't had any earthquakes in

272

00:12:12,979 --> 00:12:11,040

Australia just recently I don't think no

273

00:12:15,109 --> 00:12:12,989

no certainly none caused by the Harper

274

00:12:16,400 --> 00:12:15,119

right yes yeah and why would people be

275

00:12:17,749 --> 00:12:16,410

thinking that would cause it anyway

276

00:12:20,900 --> 00:12:17,759

because you're saying it doesn't need it

277

00:12:23,629 --> 00:12:20,910

up much yeah maybe it's because the harp

278

00:12:26,130 --> 00:12:23,639

array is with under the umbrella of us

279

00:12:28,570 --> 00:12:26,140

defense and

280

00:12:30,180 --> 00:12:28,580

that perhaps they think it's secret and

281

00:12:32,590 --> 00:12:30,190

they can't get any information from it

282

00:12:35,410 --> 00:12:32,600

which is untrue they have open days

283

00:12:38,280 --> 00:12:35,420

quite regularly you can go on to the

284

00:12:40,570 --> 00:12:38,290

heart base without having any security

285

00:12:43,030 --> 00:12:40,580

clearance or anything like that any

286

00:12:45,310 --> 00:12:43,040

international people or even their own

287

00:12:47,860 --> 00:12:45,320

citizens they can visit the HAARP site

288

00:12:50,110 --> 00:12:47,870

anytime they want and the freedom of

289

00:12:51,820 --> 00:12:50,120

information of what they do there is is

290

00:12:53,680 --> 00:12:51,830

phenomenal to have it on the Internet

291

00:12:55,900 --> 00:12:53,690

they'll provide you with it I'll show

292

00:12:58,480 --> 00:12:55,910

you stuff when you go there why it's

293

00:13:01,540 --> 00:12:58,490

been so many conspiracy theories around

294

00:13:04,449 --> 00:13:01,550

harp I'm not sure considering they also

295

00:13:06,130 --> 00:13:04,459

have a similar system in Norway so

296

00:13:08,380 --> 00:13:06,140

trauma so normally they have a system

297

00:13:10,900 --> 00:13:08,390

called ice cap and it does essentially

298

00:13:13,000 --> 00:13:10,910

the same thing it's a ionospheric heater

299

00:13:15,190 --> 00:13:13,010

that they don't seem to be too many

300

00:13:17,410 --> 00:13:15,200

conspiracy theories around ice cap and

301

00:13:20,139 --> 00:13:17,420

they also have another heater on

302

00:13:22,180 --> 00:13:20,149

Svalbard and I work with the people

303

00:13:24,190 --> 00:13:22,190

there it was manufactured by the

304

00:13:26,290 --> 00:13:24,200

University of Leicester in the UK and

305

00:13:28,750 --> 00:13:26,300

there's another an aspheric heating

306

00:13:30,550 --> 00:13:28,760

system very similar to harp although a

307

00:13:32,949 --> 00:13:30,560

little bit lower power that's operating

308

00:13:36,250 --> 00:13:32,959

there now in Australia we don't operate

309

00:13:38,260 --> 00:13:36,260

any an aspheric heating systems we just

310

00:13:42,040 --> 00:13:38,270

operate the over the rise and radar

311

00:13:44,110 --> 00:13:42,050

low-powered radar systems so we don't

312

00:13:46,900 --> 00:13:44,120

actually beam the radio frequency up

313

00:13:49,480 --> 00:13:46,910

into the ionosphere and heat it we just

314

00:13:52,180 --> 00:13:49,490

put a electro magnetic probe up there to

315

00:13:55,000 --> 00:13:52,190

see see what's going on now I've seen

316

00:13:57,940 --> 00:13:55,010

the Charter when the best time to be

317

00:14:00,730 --> 00:13:57,950

operating is for comms is it basically

318

00:14:03,010 --> 00:14:00,740

at night or midday or is the best time

319

00:14:04,840 --> 00:14:03,020

to do a nova horizon made our and and

320

00:14:06,579 --> 00:14:04,850

now sort of major project is pretty much

321

00:14:08,920 --> 00:14:06,589

but in the morning is the best time for

322

00:14:12,760 --> 00:14:08,930

he already depends as you said on the

323

00:14:16,269 --> 00:14:12,770

honest conditions but what we normally

324

00:14:19,260 --> 00:14:16,279

do is sense the ionosphere and then

325

00:14:22,900 --> 00:14:19,270

shift the frequency so you can operate

326

00:14:24,160 --> 00:14:22,910

an HF comms link any time of day

327

00:14:27,579 --> 00:14:24,170

provided you choose the appropriate

328

00:14:29,230 --> 00:14:27,589

frequency and the frequency changes

329

00:14:31,120 --> 00:14:29,240

during the day and with solar activity

330

00:14:33,250 --> 00:14:31,130

and depending on the composition of the

331

00:14:34,449 --> 00:14:33,260

atmosphere what it's doing and for

332

00:14:35,769 --> 00:14:34,459

people out there that might wanna go

333

00:14:37,759 --> 00:14:35,779

somewhere on the internet to find out

334

00:14:39,949 --> 00:14:37,769

more about this and what the harper

335

00:14:41,840 --> 00:14:39,959

is about and try and get the facts and

336

00:14:45,169 --> 00:14:41,850

balanced against theories where should

337

00:14:46,999 --> 00:14:45,179

they go for the international over the

338

00:14:52,340 --> 00:14:47,009

rise and radar research program it's

339

00:14:53,780 --> 00:14:52,350

super da hua p LED you and that gives

340

00:14:56,329 --> 00:14:53,790

you an overview of the sort of

341

00:14:58,460 --> 00:14:56,339

experimental research radars we operate

342

00:15:01,030 --> 00:14:58,470

and then of course there's our

343

00:15:05,869 --> 00:15:01,040

university of newcastle space physics

344

00:15:08,929 --> 00:15:05,879

website which is plasmid newcastle edu

345

00:15:10,819 --> 00:15:08,939

/a you and the whole thing is pretty

346

00:15:13,549 --> 00:15:10,829

open there's nothing being hidden no

347

00:15:15,759 --> 00:15:13,559

nothing being hidden and i'm happy for

348

00:15:18,259 --> 00:15:15,769

people to send me emails or chat or

349

00:15:20,059 --> 00:15:18,269

answer any questions about any of sort

350

00:15:22,340 --> 00:15:20,069

of the honors for research we do great

351
00:15:39,420 --> 00:15:22,350
look that thanks for your time Colin you

352
00:15:43,120 --> 00:15:42,070
hi this is michael cruz from the

353
00:15:45,040 --> 00:15:43,130
committee for the advancement of

354
00:15:47,440 --> 00:15:45,050
scientific skepticism at the center for

355
00:15:48,910 --> 00:15:47,450
inquiry canada Cass is committed to

356
00:15:50,830 --> 00:15:48,920
critically examining scientific

357
00:15:53,290 --> 00:15:50,840
technological and medical claims in the

358
00:15:55,660 --> 00:15:53,300
public forum across Canada working with

359
00:15:57,460 --> 00:15:55,670
our expert advisors local cfi branches

360
00:15:58,840 --> 00:15:57,470
and other skeptical groups Cass

361
00:16:01,590 --> 00:15:58,850
confronts the peddlers of pseudoscience

362
00:16:03,850 --> 00:16:01,600
with evidence-based scientific inquiry

363
00:16:06,160 --> 00:16:03,860

2010 has been a watershed here for the

364

00:16:08,050 --> 00:16:06,170

sceptical movement in Canada and in 2011

365

00:16:10,390 --> 00:16:08,060

cast will continue fighting bad science

366

00:16:11,650 --> 00:16:10,400

in the media and the government if you

367

00:16:12,970 --> 00:16:11,660

would like to become involved in the

368

00:16:14,500 --> 00:16:12,980

fight to promote critical thinking in

369

00:16:16,030 --> 00:16:14,510

Canada or if you have a concern about

370

00:16:18,220 --> 00:16:16,040

the spread of pseudoscience in the

371

00:16:21,130 --> 00:16:18,230

Canadian media please contact us at

372

00:16:23,860 --> 00:16:21,140

casts at cfi canada CA you can also

373

00:16:25,930 --> 00:16:23,870

follow us on twitter at cfi casts and on

374

00:16:28,780 --> 00:16:25,940

facebook at cass at center for inquiry

375

00:16:43,560 --> 00:16:28,790

canada casts fighting pseudoscience

376
00:16:49,210 --> 00:16:46,660
the Northeast Conference on science and

377
00:16:51,370 --> 00:16:49,220
skepticism is a yearly conference put on

378
00:16:54,190 --> 00:16:51,380
by New York City skeptics and the New

379
00:16:56,500 --> 00:16:54,200
England skeptic society it takes place

380
00:16:59,110 --> 00:16:56,510
in New York City and this year was their

381
00:17:01,810 --> 00:16:59,120
first year doing a multi-day conference

382
00:17:04,390 --> 00:17:01,820
it took place on saturday and sunday

383
00:17:07,120 --> 00:17:04,400
with events happening on friday night

384
00:17:09,939 --> 00:17:07,130
and saturday night speakers this year

385
00:17:13,689 --> 00:17:09,949
included John runny Eugenie Scott and

386
00:17:16,960 --> 00:17:13,699
keynote with phil plait there was also a

387
00:17:20,199 --> 00:17:16,970
number of panels including one that had

388
00:17:22,600 --> 00:17:20,209

Brian Dunning Sadie Crabtree Jennifer

389

00:17:24,669 --> 00:17:22,610

Michael heck among others there was also

390

00:17:26,860 --> 00:17:24,679

live recordings of the rationally

391

00:17:29,110 --> 00:17:26,870

speaking podcast and the skeptics guide

392

00:17:30,790 --> 00:17:29,120

to the universe I had a chance to sit

393

00:17:32,890 --> 00:17:30,800

down with a number of the speakers to

394

00:17:37,870 --> 00:17:32,900

get their take on what they thought of

395

00:17:48,649 --> 00:17:41,840

9 by Super Bowl extortion one in ten

396

00:17:49,940 --> 00:17:48,659

million all right this is travis from

397

00:17:53,899 --> 00:17:49,950

the skeptic zone i'm sitting here with

398

00:17:55,370 --> 00:17:53,909

George Arab with Nexus 2011 just about

399

00:17:58,789 --> 00:17:55,380

to begin how's it going George good

400

00:18:01,909 --> 00:17:58,799

another nexus another nexus yes I knew

401
00:18:03,409 --> 00:18:01,919
what 17 in once or something you've been

402
00:18:05,180 --> 00:18:03,419
with them from the start Evan you start

403
00:18:07,100 --> 00:18:05,190
yeah yeah real real honor to be here

404
00:18:09,769 --> 00:18:07,110
again yay so what are you doing form

405
00:18:12,950 --> 00:18:09,779
this time I'm on a panel today which has

406
00:18:15,049 --> 00:18:12,960
to do with the trusting information in

407
00:18:17,990 --> 00:18:15,059
the media and then I have which is fine

408
00:18:20,450 --> 00:18:18,000
but the the big coolest thing is tonight

409
00:18:21,529 --> 00:18:20,460
I'm doing a concert with my band which

410
00:18:23,149 --> 00:18:21,539
I'm very excited for because I've never

411
00:18:26,029 --> 00:18:23,159
actually done a performance at one of

412
00:18:27,320 --> 00:18:26,039
these skeptical events with a band so

413
00:18:29,330 --> 00:18:27,330

it's a three piece band playing tonight

414

00:18:31,250 --> 00:18:29,340

wow that's very exciting yeah I'm really

415

00:18:34,130 --> 00:18:31,260

psyched how long has your set for we got

416

00:18:38,510 --> 00:18:34,140

a nice huge to our set Wow tonight from

417

00:18:40,430 --> 00:18:38,520

832 to roll up to it 1030 I'm very

418

00:18:41,690 --> 00:18:40,440

excited I'm break said Eric and Vinny

419

00:18:44,330 --> 00:18:41,700

are going to be joining me too

420

00:18:46,580 --> 00:18:44,340

exceedingly talented musicians that will

421

00:18:47,990 --> 00:18:46,590

completely show me up and you get to see

422

00:18:50,330 --> 00:18:48,000

what actual musicians look like to me

423

00:18:51,649 --> 00:18:50,340

very exciting fantastic is there

424

00:18:53,450 --> 00:18:51,659

anything else you're looking forward to

425

00:18:55,789 --> 00:18:53,460

it Nexus holla Phil Plait always

426

00:18:57,950 --> 00:18:55,799

delivers a nice speech I'm sure and just

427

00:19:00,380 --> 00:18:57,960

you know for me the coolest thing about

428

00:19:03,049 --> 00:19:00,390

this is that is the hang the opportunity

429

00:19:05,269 --> 00:19:03,059

to sort of make plans for the next thing

430

00:19:10,100 --> 00:19:05,279

whatever that next thing is whether it's

431

00:19:12,830 --> 00:19:10,110

a tam whether it's a whatever a dragon

432

00:19:14,690 --> 00:19:12,840

con this is kind of where those plans

433

00:19:16,130 --> 00:19:14,700

are made or even just just to meet up

434

00:19:19,590 --> 00:19:16,140

with friends down the road at some point

435

00:19:22,640 --> 00:19:19,600

so to bump into all the SGU people again

436

00:19:25,440 --> 00:19:22,650

it's always so cool it's just so nice

437

00:19:27,600 --> 00:19:25,450

all right she's an opportunity to make

438

00:19:29,250 --> 00:19:27,610

plans for the next fun event yeah and I

439

00:19:31,169 --> 00:19:29,260

think that's part of the the nice thing

440

00:19:32,580 --> 00:19:31,179

about this year Nexus being multi day

441

00:19:34,740 --> 00:19:32,590

because we're able to hang out with

442

00:19:36,659 --> 00:19:34,750

people a lot of people i was at nexus

443

00:19:38,130 --> 00:19:36,669

one a lot of us were kind of in and out

444

00:19:40,260 --> 00:19:38,140

the same day so he didn't get a chance

445

00:19:41,580 --> 00:19:40,270

to hang out after the event I've always

446

00:19:43,409 --> 00:19:41,590

had gigs I've always liked done myself

447

00:19:45,330 --> 00:19:43,419

and I've had to run last year I attended

448

00:19:46,980 --> 00:19:45,340

my set and then I think four hours later

449

00:19:49,140 --> 00:19:46,990

I was on a stage in the poke and I was

450

00:19:51,600 --> 00:19:49,150

playing for five people dancing so it's

451
00:19:54,510 --> 00:19:51,610
kind of both both sides of my career but

452
00:19:57,510 --> 00:19:54,520
I said this before about a bench like

453
00:20:00,210 --> 00:19:57,520
Tam or things like QED or whatever like

454
00:20:03,539 --> 00:20:00,220
the speakers are great and the events

455
00:20:05,130 --> 00:20:03,549
are the speeches are interesting a lot

456
00:20:07,169 --> 00:20:05,140
of information that they provide is

457
00:20:09,480 --> 00:20:07,179
available in other places what these

458
00:20:11,370 --> 00:20:09,490
things are so great at providing though

459
00:20:13,500 --> 00:20:11,380
is a opportunity for the meet each other

460
00:20:17,820 --> 00:20:13,510
so you literally get to meet sort of

461
00:20:20,310 --> 00:20:17,830
these faces and avatars and hat names in

462
00:20:21,750 --> 00:20:20,320
meatspace yeah and then you get to sort

463
00:20:23,370 --> 00:20:21,760

of say hey let's get together and do

464

00:20:24,600 --> 00:20:23,380

this other thing or let's our own

465

00:20:26,130 --> 00:20:24,610

podcast or let's start our own

466

00:20:28,380 --> 00:20:26,140

conference or whatever and that's that's

467

00:20:29,370 --> 00:20:28,390

Annie's is so awesome language great so

468

00:20:31,350 --> 00:20:29,380

what do you get coming up you're doing

469

00:20:33,630 --> 00:20:31,360

you're going to be at am-9 yeah they

470

00:20:36,120 --> 00:20:33,640

asked me to MC tam nine which is and

471

00:20:39,930 --> 00:20:36,130

ridiculously exciting it's very bizarre

472

00:20:43,110 --> 00:20:39,940

to come from being purely a fan you know

473

00:20:45,930 --> 00:20:43,120

five six years ago to hearing about Tam

474

00:20:48,210 --> 00:20:45,940

to attending tam to performing at Tim's

475

00:20:51,330 --> 00:20:48,220

emceeding tam within the span of you know

476

00:20:54,060 --> 00:20:51,340

a small dogs life is is pretty cool has

477

00:20:56,490 --> 00:20:54,070

you get anything else coming up uh yeah

478

00:20:58,049 --> 00:20:56,500

bunch of performances Baltic on is

479

00:21:00,299 --> 00:20:58,059

coming up that's another sort of fun

480

00:21:03,330 --> 00:21:00,309

more sci-fi festival that happens at a

481

00:21:05,610 --> 00:21:03,340

Morial day and Dragon Con of course and

482

00:21:08,029 --> 00:21:05,620

just going to try to keep performing and

483

00:21:11,330 --> 00:21:08,039

writing and podcasting and all other

484

00:21:14,130 --> 00:21:11,340

great well thank you very much sweet

485

00:21:18,000 --> 00:21:14,140

seriously here working right nation's

486

00:21:21,419 --> 00:21:18,010

emperor generally but not reckon paws

487

00:21:24,180 --> 00:21:21,429

yes so this is travis i'm sitting here

488

00:21:27,539 --> 00:21:24,190

with brian dunning thanks go to a calm

489

00:21:30,510 --> 00:21:27,549

of course and let's say so this is your

490

00:21:32,850 --> 00:21:30,520

first nexus right yeah i heard about the

491

00:21:34,289 --> 00:21:32,860

first two and so wanted to go there but

492

00:21:36,299 --> 00:21:34,299

like I'm the last person to find out

493

00:21:38,730 --> 00:21:36,309

about anything so I didn't find out

494

00:21:40,830 --> 00:21:38,740

about both previous neck necks I until

495

00:21:42,149 --> 00:21:40,840

they were already over but I was really

496

00:21:44,070 --> 00:21:42,159

excited to be able to come out for this

497

00:21:46,980 --> 00:21:44,080

one right and what are you doing at this

498

00:21:49,320 --> 00:21:46,990

one I'm going to be on a panel with with

499

00:21:51,690 --> 00:21:49,330

John Renick moderating and it's asking

500

00:21:53,580 --> 00:21:51,700

what I think is probably the single most

501
00:21:55,649 --> 00:21:53,590
important question it's probably the

502
00:22:00,060 --> 00:21:55,659
average question that I get in all of my

503
00:22:03,299 --> 00:22:00,070
emails and it's how do how do people

504
00:22:04,860 --> 00:22:03,309
know what information to believe so what

505
00:22:06,630 --> 00:22:04,870
I'll say you got any other projects

506
00:22:08,730 --> 00:22:06,640
coming up by you're gonna be are you

507
00:22:11,669 --> 00:22:08,740
speaking at stake tanner I'm not

508
00:22:14,490 --> 00:22:11,679
speaking at am however I'm yeah I do

509
00:22:17,100 --> 00:22:14,500
have one of your projects that I'm

510
00:22:19,950 --> 00:22:17,110
working on I'm actually making a push I

511
00:22:22,529 --> 00:22:19,960
think it's a reasonable goal to be doing

512
00:22:25,139 --> 00:22:22,539
sklep tied and related projects full-time

513
00:22:26,519 --> 00:22:25,149

by the end of the year wow so that's

514

00:22:28,320 --> 00:22:26,529

exciting check back a year from now

515

00:22:29,460 --> 00:22:28,330

we'll see if it came true or not that's

516

00:22:33,149 --> 00:22:29,470

what I'm working for so I'm working

517

00:22:34,620 --> 00:22:33,159

extremely hard every day trying to make

518

00:22:37,019 --> 00:22:34,630

that happen I just keep looking out

519

00:22:39,029 --> 00:22:37,029

better more quality information better

520

00:22:41,220 --> 00:22:39,039

more quality information like your

521

00:22:43,740 --> 00:22:41,230

rubberized the hoop picture from your

522

00:22:45,220 --> 00:22:43,750

last in fact just like the rubberized

523

00:22:47,200 --> 00:22:45,230

poo picture yeah

524

00:22:50,289 --> 00:22:47,210

I'm going I'm trying to do more in fact

525

00:22:51,880 --> 00:22:50,299

videos of course I'm trying to do better

526

00:22:55,240 --> 00:22:51,890

in a better job with the sceptile

527

00:22:57,010 --> 00:22:55,250

episodes and there's just a whole bunch

528

00:22:59,500 --> 00:22:57,020

of extra projects that I've got going

529

00:23:01,419 --> 00:22:59,510

with with the website I'm going to be

530

00:23:05,440 --> 00:23:01,429

adding some blogs and stuff and all

531

00:23:07,480 --> 00:23:05,450

projects designed to improve skep tight

532

00:23:10,000 --> 00:23:07,490

and make it more of a commercially

533

00:23:12,850 --> 00:23:10,010

viable product I mean it's always going

534

00:23:14,620 --> 00:23:12,860

to be free like everybody else but you

535

00:23:15,700 --> 00:23:14,630

know I've been a strong believer that if

536

00:23:17,380 --> 00:23:15,710

any of this material is going to

537

00:23:19,930 --> 00:23:17,390

actually become relevant it has to be

538

00:23:22,690 --> 00:23:19,940

successful in the marketplace for it to

539

00:23:24,010 --> 00:23:22,700

survive well that's exciting yeah so one

540

00:23:25,870 --> 00:23:24,020

thing that I wanted to ask you about

541

00:23:27,940 --> 00:23:25,880

because you don't really get asked about

542

00:23:30,780 --> 00:23:27,950

this very much and i'm a member of it is

543

00:23:32,770 --> 00:23:30,790

the skeptic mailing list oh yes yes so

544

00:23:35,950 --> 00:23:32,780

have you been doing anything with that

545

00:23:38,200 --> 00:23:35,960

or I'm not done with it will scatter

546

00:23:40,060 --> 00:23:38,210

talk it's it's it's an email it's an

547

00:23:43,419 --> 00:23:40,070

email list so it's like a forum except

548

00:23:45,100 --> 00:23:43,429

it's all real time email and there's

549

00:23:46,539 --> 00:23:45,110

last time I checked is a couple of weeks

550

00:23:48,640 --> 00:23:46,549

ago there are six hundred and sixty

551
00:23:51,400 --> 00:23:48,650
people on it so of course someone joke

552
00:23:53,470 --> 00:23:51,410
we just need six more but it's a very

553
00:23:55,390 --> 00:23:53,480
active list it's great it's a lot of fun

554
00:23:57,820 --> 00:23:55,400
it's not something that I'm yet

555
00:23:59,710 --> 00:23:57,830
leveraging in any way to make it really

556
00:24:01,990 --> 00:23:59,720
bring it in toward make it more part of

557
00:24:05,820 --> 00:24:02,000
the skeptic immunity it's basically just

558
00:24:07,780 --> 00:24:05,830
a well moderated skept talk of skeptical

559
00:24:09,460 --> 00:24:07,790
email list or there's lots of really

560
00:24:11,500 --> 00:24:09,470
good discussion lots of great people and

561
00:24:14,080 --> 00:24:11,510
I think really high quality discussion

562
00:24:17,020 --> 00:24:14,090
because we throw out the people who you

563
00:24:18,700 --> 00:24:17,030

know what rolls or bread right well

564

00:24:25,850 --> 00:24:18,710

that's it thank you very much hey thank

565

00:24:31,830 --> 00:24:28,350

and i'm sitting here with Eugenie Scott

566

00:24:33,900 --> 00:24:31,840

and we're at Nexus 2011 thanks for

567

00:24:35,700 --> 00:24:33,910

joining me we are indeed thank you this

568

00:24:38,310 --> 00:24:35,710

is going to be fun so is this your first

569

00:24:39,600 --> 00:24:38,320

Nexus this is my first Nexus yes why

570

00:24:41,669 --> 00:24:39,610

don't what do you think about it so far

571

00:24:43,680 --> 00:24:41,679

so far it's great I mean they have a

572

00:24:46,950 --> 00:24:43,690

really interesting group of speakers and

573

00:24:48,990 --> 00:24:46,960

it's a very well organized meaning you

574

00:24:52,110 --> 00:24:49,000

know the the Bay Area skeptics is just

575

00:24:54,810 --> 00:24:52,120

starting to have our own regional

576

00:24:57,299 --> 00:24:54,820

leading and in fact we were inspired by

577

00:25:00,480 --> 00:24:57,309

what these guys out here and we had our

578

00:25:03,870 --> 00:25:00,490

skeptic al 2010 last year and we're not

579

00:25:05,430 --> 00:25:03,880

gonna have skeptical 2011 in next month

580

00:25:07,049 --> 00:25:05,440

so I'm kind of watching around the

581

00:25:08,700 --> 00:25:07,059

margins here and getting some tips on

582

00:25:10,380 --> 00:25:08,710

how to run a smooth meeting so these

583

00:25:13,500 --> 00:25:10,390

guys are doing great wow that's great so

584

00:25:15,720 --> 00:25:13,510

what are you giving a talk on well I'm I

585

00:25:19,049 --> 00:25:15,730

am best known as the cheerful person who

586

00:25:21,630 --> 00:25:19,059

gives a really depressing time and today

587

00:25:24,600 --> 00:25:21,640

isn't going to be any different the

588

00:25:27,120 --> 00:25:24,610

title of my talk is why we still need to

589

00:25:29,940 --> 00:25:27,130

take creationism seriously

590

00:25:32,850 --> 00:25:29,950

and I will be talking about some of the

591

00:25:35,010 --> 00:25:32,860

recent developments well recent within

592

00:25:37,230 --> 00:25:35,020

the last five years its evolution takes

593

00:25:39,450 --> 00:25:37,240

place slowly as you know in the

594

00:25:42,590 --> 00:25:39,460

anti-evolution movement and how much

595

00:25:45,030 --> 00:25:42,600

more subtle the legislation that's being

596

00:25:47,310 --> 00:25:45,040

submitted to legislators around the

597

00:25:49,290 --> 00:25:47,320

country's got the wording is much more

598

00:25:52,950 --> 00:25:49,300

difficult to challenge and it's much

599

00:25:55,710 --> 00:25:52,960

more public friendly shall we say yep so

600

00:25:57,420 --> 00:25:55,720

um what's the latest that's coming I get

601
00:25:59,730 --> 00:25:57,430
your email alerts and there was one I

602
00:26:03,000 --> 00:25:59,740
think it was Tennessee Tennessee yep

603
00:26:05,070 --> 00:26:03,010
just last Thursday I think it is the

604
00:26:07,760 --> 00:26:05,080
fine state of Tennessee which is a

605
00:26:11,010 --> 00:26:07,770
wonderful beautiful part of our country

606
00:26:15,300 --> 00:26:11,020
the House of Representatives there past

607
00:26:19,320 --> 00:26:15,310
the its version of a particularly

608
00:26:21,390 --> 00:26:19,330
unfortunate anti-evolution law and it

609
00:26:23,580 --> 00:26:21,400
looks very much like the Senate will

610
00:26:25,350 --> 00:26:23,590
follow suit the Senate's bill is a

611
00:26:27,780 --> 00:26:25,360
little bit different but they shouldn't

612
00:26:30,390 --> 00:26:27,790
be hard to reconcile and unfortunately

613
00:26:32,430 --> 00:26:30,400

the legislature doesn't adjourn until

614

00:26:34,680 --> 00:26:32,440

the end of may so there's about six

615

00:26:35,580 --> 00:26:34,690

weeks to do it so things aren't looking

616

00:26:39,149 --> 00:26:35,590

good

617

00:26:40,950 --> 00:26:39,159

so what else you have coming up we're

618

00:26:44,190 --> 00:26:40,960

watching a number of other states where

619

00:26:47,399 --> 00:26:44,200

there's legislation pending and our

620

00:26:49,350 --> 00:26:47,409

major concern right now is these these

621

00:26:52,710 --> 00:26:49,360

academic freedom axes they're called

622

00:26:56,490 --> 00:26:52,720

because this is an idea that's been

623

00:26:58,980 --> 00:26:56,500

around for actually since about two

624

00:27:01,169 --> 00:26:58,990

thousand four and there's every year

625

00:27:03,690 --> 00:27:01,179

there's a rash of it expels every year

626

00:27:05,370 --> 00:27:03,700

our allies at the grassroots level bless

627

00:27:07,830 --> 00:27:05,380

their hearts managed to keep these guys

628

00:27:10,409 --> 00:27:07,840

bottled up when the tulip slipped

629

00:27:13,470 --> 00:27:10,419

through one in 2008 in Louisiana and

630

00:27:15,630 --> 00:27:13,480

then this year in Tennessee not by the

631

00:27:17,730 --> 00:27:15,640

way for lack of trying our friends in

632

00:27:19,320 --> 00:27:17,740

Louisiana where our allies in Tennessee

633

00:27:22,919 --> 00:27:19,330

these folks have worked very very hard

634

00:27:24,539 --> 00:27:22,929

but sometimes sometimes the politics is

635

00:27:26,409 --> 00:27:24,549

just stacked too hard against you and

636

00:27:28,419 --> 00:27:26,419

and that's the situation

637

00:27:30,039 --> 00:27:28,429

those two states so what are you doing

638

00:27:33,039 --> 00:27:30,049

those cases when let's get gotten to

639

00:27:35,289 --> 00:27:33,049

that point well first of all we look

640

00:27:38,049 --> 00:27:35,299

very carefully at the deal we ask our

641

00:27:42,450 --> 00:27:38,059

legal advisory committee to scrutinize

642

00:27:45,220 --> 00:27:42,460

the way these bills are crafted because

643

00:27:49,960 --> 00:27:45,230

frankly nobody wants to make that law

644

00:27:52,119 --> 00:27:49,970

yeah and what you want to do is if you

645

00:27:54,549 --> 00:27:52,129

have to challenge something legally and

646

00:27:56,889 --> 00:27:54,559

you know there have been almost 40 of

647

00:27:59,200 --> 00:27:56,899

these bills and 38 of them and then

648

00:28:02,200 --> 00:27:59,210

bottled up so obviously you know clearly

649

00:28:04,029 --> 00:28:02,210

the the our efforts have been not placed

650

00:28:05,619 --> 00:28:04,039

on litigation our efforts are placed on

651
00:28:06,909 --> 00:28:05,629
getting these things that bottled up in

652
00:28:09,729 --> 00:28:06,919
the first place and not getting them

653
00:28:12,789 --> 00:28:09,739
fast we always prefer to work behind the

654
00:28:14,909 --> 00:28:12,799
scenes and work off stage that to avoid

655
00:28:18,159 --> 00:28:14,919
litigation nobody wants to go to court

656
00:28:20,970 --> 00:28:18,169
but when these kinds of bills passed

657
00:28:24,789 --> 00:28:20,980
then the decision has to be made and

658
00:28:28,479 --> 00:28:24,799
with the Louisiana bill it you know the

659
00:28:30,729 --> 00:28:28,489
facts just weren't right these bills are

660
00:28:33,070 --> 00:28:30,739
written very cleverly so that they are

661
00:28:35,649 --> 00:28:33,080
less I mean they're deliberately written

662
00:28:37,960 --> 00:28:35,659
so that they will be less susceptible to

663
00:28:39,729 --> 00:28:37,970

an Establishment Clause challenge I

664

00:28:41,169 --> 00:28:39,739

establishment clause in the u.s. of

665

00:28:42,460 --> 00:28:41,179

course is the part of our First

666

00:28:46,240 --> 00:28:42,470

Amendment

667

00:28:49,270 --> 00:28:46,250

calls for public institutions to be

668

00:28:50,590 --> 00:28:49,280

religiously neutral the separation of

669

00:28:52,419 --> 00:28:50,600

church and state is how it's usually

670

00:28:54,190 --> 00:28:52,429

phrase but it's actually much more so

671

00:28:58,240 --> 00:28:54,200

much more subtle and some respect more

672

00:29:01,149 --> 00:28:58,250

powerful than that so you don't want to

673

00:29:07,080 --> 00:29:01,159

make bad law so what you kind of have to

674

00:29:09,310 --> 00:29:07,090

do is in without the ability or the

675

00:29:11,399 --> 00:29:09,320

prospect of success of a facial

676

00:29:15,070 --> 00:29:11,409

challenge challenging a bill on its face

677

00:29:16,930 --> 00:29:15,080

you have to catch somebody in the act if

678

00:29:20,080 --> 00:29:16,940

you will you have to catch that teacher

679

00:29:22,899 --> 00:29:20,090

who have stepped over the line we have

680

00:29:24,850 --> 00:29:22,909

to try to find where a teacher is

681

00:29:27,760 --> 00:29:24,860

teaching some form of creationism which

682

00:29:31,240 --> 00:29:27,770

the courts have been very consistent in

683

00:29:34,690 --> 00:29:31,250

declaring unconstitutional and use that

684

00:29:37,120 --> 00:29:34,700

example of how this bill does cause harm

685

00:29:39,220 --> 00:29:37,130

and so even though the bill sounds very

686

00:29:41,320 --> 00:29:39,230

innocent here's how it's being played

687

00:29:43,539 --> 00:29:41,330

out judge this bill should be struck

688

00:29:45,669 --> 00:29:43,549

down because or this law should be

689

00:29:47,950 --> 00:29:45,679

struck down it's a hurting a lot the law

690

00:29:50,620 --> 00:29:47,960

should be struck down because it is

691

00:29:52,299 --> 00:29:50,630

being used to promote religion yeah but

692

00:29:56,049 --> 00:29:52,309

that's a lot tougher yeah it's a lot

693

00:29:57,480 --> 00:29:56,059

harder to find somebody catching

694

00:30:01,600 --> 00:29:57,490

somebody in the act so this beam right

695

00:30:03,220 --> 00:30:01,610

so are you going to be at tam yes I'm

696

00:30:07,270 --> 00:30:03,230

going to be a tempest year are you going

697

00:30:09,250 --> 00:30:07,280

to be on same similar talker um I don't

698

00:30:11,799 --> 00:30:09,260

know Tam's a long way away you know do

699

00:30:13,149 --> 00:30:11,809

you know how many talks away I got I

700

00:30:15,200 --> 00:30:13,159

haven't even thought of what I'm going

701
00:30:17,240 --> 00:30:15,210
to say attend

702
00:30:19,549 --> 00:30:17,250
I don't think anyway may have sent him

703
00:30:22,010 --> 00:30:19,559
an abstract but you know I don't prepare

704
00:30:23,720 --> 00:30:22,020
the talks until shortly before that the

705
00:30:25,190 --> 00:30:23,730
actual presentation because it's a lot

706
00:30:27,440 --> 00:30:25,200
fresher that way and i can add new

707
00:30:29,180 --> 00:30:27,450
things I mean this talk that I'm giving

708
00:30:33,049 --> 00:30:29,190
this afternoon is truly hot off the

709
00:30:34,519 --> 00:30:33,059
press Oh deal with the I'm going to I'm

710
00:30:37,760 --> 00:30:34,529
going to do something that I hardly ever

711
00:30:40,220 --> 00:30:37,770
do in the talk which is provide text we

712
00:30:41,570 --> 00:30:40,230
should look at because I I think that i

713
00:30:44,600 --> 00:30:41,580

think there's there's hardly anything

714

00:30:47,120 --> 00:30:44,610

worse than a than the speaker who shows

715

00:30:48,620 --> 00:30:47,130

the audience line after line of words

716

00:30:50,240 --> 00:30:48,630

and that there's hardly anything more

717

00:30:52,789 --> 00:30:50,250

boring than that but unfortunately I do

718

00:30:55,370 --> 00:30:52,799

have to show people the words here

719

00:30:57,560 --> 00:30:55,380

because that is what that is what you

720

00:30:59,690 --> 00:30:57,570

need to know about okay a subtlety with

721

00:31:01,880 --> 00:30:59,700

which these bills are being crafted yeah

722

00:31:04,669 --> 00:31:01,890

well I'm looking forward to hearing your

723

00:31:07,399 --> 00:31:04,679

talk here and TAM night thank you very

724

00:31:09,500 --> 00:31:07,409

much I'm looking forward to the rest of

725

00:31:16,019 --> 00:31:09,510

this meeting because this adventure

726

00:31:23,789 --> 00:31:19,830

I it's travis here and i'm sitting here

727

00:31:27,779 --> 00:31:23,799

with Dale Roy my wife and vice president

728

00:31:32,310 --> 00:31:27,789

of Granite State skeptics hello and what

729

00:31:35,909 --> 00:31:32,320

do you think of Nexus 3 really liked it

730

00:31:39,629 --> 00:31:35,919

thought it was a huge difference from

731

00:31:42,509 --> 00:31:39,639

the first one and a lot of really good

732

00:31:44,570 --> 00:31:42,519

talks and panels and I thought it was

733

00:31:48,089 --> 00:31:44,580

good that they extended it to two days

734

00:31:50,969 --> 00:31:48,099

yes I agree the doing at multiple days

735

00:31:53,009 --> 00:31:50,979

was fantastic yeah especially having the

736

00:31:55,139 --> 00:31:53,019

after-hours events the two drinking

737

00:31:58,019 --> 00:31:55,149

skeptically oh those were a lot of fun

738

00:32:00,029 --> 00:31:58,029

yeah and then they have a few museum

739

00:32:01,739 --> 00:32:00,039

visits that we didn't get to go to but I

740

00:32:05,639 --> 00:32:01,749

heard that they were really good yes

741

00:32:09,119 --> 00:32:05,649

stupid work got in the way yeah so what

742

00:32:13,379 --> 00:32:09,129

which talks did you enjoy I enjoyed Phil

743

00:32:16,499 --> 00:32:13,389

Plait stock yeah I enjoyed the panel on

744

00:32:18,869 --> 00:32:16,509

information overload yes I I really

745

00:32:24,239 --> 00:32:18,879

enjoyed that one as well it was nice to

746

00:32:25,859 --> 00:32:24,249

hear Sadie Crabtree in person yes I was

747

00:32:27,899 --> 00:32:25,869

very impressed with what she had to say

748

00:32:31,349 --> 00:32:27,909

on the panel it was also good to meet

749

00:32:32,339 --> 00:32:31,359

her drinking skeptically yeah yeah it's

750

00:32:35,940 --> 00:32:32,349

always good to catch up with friends

751
00:32:39,209 --> 00:32:35,950
these conferences yeah and we saw plenty

752
00:32:42,479 --> 00:32:39,219
of placebo bands those were good good to

753
00:32:45,719 --> 00:32:42,489
hand out yes drinking skeptically with

754
00:32:49,320 --> 00:32:45,729
George Arab was a packed packed event oh

755
00:32:54,499 --> 00:32:49,330
yes overflowing to the street yes

756
00:32:58,169 --> 00:32:54,509
literally sgy oh yes it is a fantastic

757
00:33:00,839 --> 00:32:58,179
thing to experience yeah always good to

758
00:33:04,109 --> 00:33:00,849
hear this GU life so what'd you think of

759
00:33:08,209 --> 00:33:04,119
Phil Plait stock I thought it was really

760
00:33:12,979 --> 00:33:08,219
good I liked how he was able to mix

761
00:33:15,930 --> 00:33:12,989
calculus of all things in with his

762
00:33:18,289 --> 00:33:15,940
explanation on at what point do you make

763
00:33:21,889 --> 00:33:18,299

a decision on what evidence to believe

764

00:33:24,599 --> 00:33:21,899

yeah it was basically he made it like a

765

00:33:27,100 --> 00:33:24,609

explained it similar to a staircase that

766

00:33:29,530 --> 00:33:27,110

you can never get to the end

767

00:33:32,530 --> 00:33:29,540

that the steps end up getting closer and

768

00:33:34,720 --> 00:33:32,540

closer but you never reached the top was

769

00:33:38,650 --> 00:33:34,730

I was it what was it called the epsilon

770

00:33:40,810 --> 00:33:38,660

yeah yes that was that was very good

771

00:33:43,750 --> 00:33:40,820

does there's a point that you reach

772

00:33:45,130 --> 00:33:43,760

where you have to just believe what

773

00:33:47,530 --> 00:33:45,140

you're going to believe based on the

774

00:33:49,630 --> 00:33:47,540

evidence you have I wish someone was

775

00:33:51,430 --> 00:33:49,640

able to explain calculus to me that

776

00:33:55,600 --> 00:33:51,440

easily when I was actually taking the

777

00:33:57,669 --> 00:33:55,610

course many moons ago and the the

778

00:34:00,190 --> 00:33:57,679

information overload talk with our panel

779

00:34:02,350 --> 00:34:00,200

is very very good yeah I really

780

00:34:05,289 --> 00:34:02,360

appreciate that because I certainly feel

781

00:34:09,220 --> 00:34:05,299

like we're in an explosion of

782

00:34:13,149 --> 00:34:09,230

availability of information no very

783

00:34:15,700 --> 00:34:13,159

difficult to distinguish at times what

784

00:34:29,200 --> 00:34:15,710

is reliable and what is not so I guess

785

00:34:33,830 --> 00:34:32,149

hey bro hey bro what's this message you

786

00:34:35,240 --> 00:34:33,840

sent me about a million dollars skeptic

787

00:34:36,710 --> 00:34:35,250

bros don't come and finally cracked it a

788

00:34:39,080 --> 00:34:36,720

detection device that will prove the

789

00:34:43,159 --> 00:34:39,090

existence of the paranormal what let me

790

00:34:46,639 --> 00:34:43,169

assure you hey why are we in a cupboard

791

00:34:49,909 --> 00:34:46,649

check it out a new placebo band and it's

792

00:34:52,399 --> 00:34:49,919

glowing yes in the dark that's when the

793

00:34:54,919 --> 00:34:52,409

ghosts are about we're gonna win Randy's

794

00:34:56,659 --> 00:34:54,929

million dollars I'm going home let me

795

00:35:02,150 --> 00:34:56,669

out can't go but only opens from the

796

00:35:04,940 --> 00:35:02,160

outside go to scare dick balls get a

797

00:35:14,810 --> 00:35:04,950

glow the doxy bulb and where you gonna

798

00:35:17,620 --> 00:35:14,820

go skeptic both the car now here's a

799

00:35:21,320 --> 00:35:17,630

report from the Today Tonight program as

800

00:35:23,150 --> 00:35:21,330

seen in Adelaide this story went to air

801
00:35:25,700 --> 00:35:23,160
in Adelaide I hope we'll go to the air

802
00:35:27,260 --> 00:35:25,710
around the country it's the audio from

803
00:35:29,840 --> 00:35:27,270
the report you don't need the pictures

804
00:35:34,740 --> 00:35:29,850
and it's all about the modern witchcraft

805
00:35:39,970 --> 00:35:37,839
homeopathy generates billions of dollars

806
00:35:42,460 --> 00:35:39,980
in global sales of its so-called natural

807
00:35:44,380 --> 00:35:42,470
medicines these alternative treatments

808
00:35:46,839 --> 00:35:44,390
are used for all kinds of ailments in

809
00:35:49,030 --> 00:35:46,849
both adults and children but what's

810
00:35:51,220 --> 00:35:49,040
really in them and do they actually work

811
00:35:53,589 --> 00:35:51,230
or are they nothing more than expensive

812
00:35:55,480 --> 00:35:53,599
placebos well Frank Bangalow went

813
00:36:03,670 --> 00:35:55,490

looking for those answers and what he

814

00:36:06,579 --> 00:36:03,680

found will shock you know herbs no

815

00:36:09,910 --> 00:36:06,589

ingredients is more like witchcraft and

816

00:36:12,760 --> 00:36:09,920

science after 200 years and after 200

817

00:36:15,910 --> 00:36:12,770

clinical trials there is still no good

818

00:36:18,480 --> 00:36:15,920

evidence at all for any condition that

819

00:36:20,859 --> 00:36:18,490

homeopathy works yet homeopathy

820

00:36:24,309 --> 00:36:20,869

continues to thrive virtually

821

00:36:26,849 --> 00:36:24,319

unchallenged unproven products labeled

822

00:36:29,290 --> 00:36:26,859

natural medicine sitting alongside

823

00:36:32,200 --> 00:36:29,300

conventional medicines on pharmacy

824

00:36:34,960 --> 00:36:32,210

shelves scandalous says Richard Saunders

825

00:36:36,549 --> 00:36:34,970

of the Australian skeptics you know

826

00:36:38,230 --> 00:36:36,559

there are laws in this country about the

827

00:36:40,480 --> 00:36:38,240

false labeling of medicine and

828

00:36:43,240 --> 00:36:40,490

homeopathy which claims to be medicine

829

00:36:45,609 --> 00:36:43,250

should be subject to those same laws the

830

00:36:49,329 --> 00:36:45,619

principles of homeopathy make no sense

831

00:36:51,640 --> 00:36:49,339

whatsoever that like cures like in other

832

00:36:54,549 --> 00:36:51,650

words the substance that causes a

833

00:36:57,940 --> 00:36:54,559

symptom will cure a symptom so for

834

00:37:00,520 --> 00:36:57,950

insomnia caffeine a stimulant is the

835

00:37:02,740 --> 00:37:00,530

main ingredient now this might seem a

836

00:37:03,970 --> 00:37:02,750

little counterintuitive but this is

837

00:37:06,460 --> 00:37:03,980

where the second principle behind

838

00:37:08,650 --> 00:37:06,470

homeopathic comes in the idea is when

839

00:37:10,839 --> 00:37:08,660

you start diluting out the substance it

840

00:37:12,940 --> 00:37:10,849

goes from being something the cause of

841

00:37:16,180 --> 00:37:12,950

something to something that takes away

842

00:37:19,539 --> 00:37:16,190

the cause that's the most controversial

843

00:37:22,120 --> 00:37:19,549

aspect and has scientists like dr. Ian

844

00:37:25,150 --> 00:37:22,130

Musgrave from the Adelaide University's

845

00:37:28,000 --> 00:37:25,160

School of pharmacology reeling in utter

846

00:37:30,370 --> 00:37:28,010

disbelief what is the problem here is

847

00:37:33,400 --> 00:37:30,380

that homey paths are using very very

848

00:37:35,829 --> 00:37:33,410

large delusions here's the absurdity of

849

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

this so-called natural medicine the

850

00:37:40,210 --> 00:37:37,849

active ingredients have been diluted in

851
00:37:42,839 --> 00:37:40,220
water to such an extent I'm talking

852
00:37:46,240 --> 00:37:42,849
about millions upon millions on millions

853
00:37:46,930 --> 00:37:46,250
upon millions of times that's the

854
00:37:50,650 --> 00:37:46,940
equivalent

855
00:37:52,990 --> 00:37:50,660
of me placing a drop in the ocean you're

856
00:37:55,780 --> 00:37:53,000
getting a dose of nothing when have you

857
00:38:01,120 --> 00:37:55,790
perhaps talk about delusions they often

858
00:38:02,859 --> 00:38:01,130
talk in terms of 1 C 2 C 3 C where C

859
00:38:05,589 --> 00:38:02,869
stands for a dilution of one and a

860
00:38:09,099 --> 00:38:05,599
hundred you'll find that information on

861
00:38:12,849 --> 00:38:09,109
the labels so 30 see in these two

862
00:38:16,000 --> 00:38:12,859
products indicates a drop or molecule of

863
00:38:18,970 --> 00:38:16,010

the active ingredient into all of the

864

00:38:20,319 --> 00:38:18,980

Earth's oceans now most hobby path will

865

00:38:24,390 --> 00:38:20,329

agree with that they say okay let's find

866

00:38:27,630 --> 00:38:24,400

there is no original substance in there

867

00:38:30,700 --> 00:38:27,640

what's happening is somehow the water is

868

00:38:32,680 --> 00:38:30,710

memorizing or carrying the imprint of

869

00:38:35,319 --> 00:38:32,690

the original chemical in there this

870

00:38:37,690 --> 00:38:35,329

claim is absolutely ridiculous because

871

00:38:40,000 --> 00:38:37,700

if water had a memory then it would

872

00:38:41,890 --> 00:38:40,010

remember every bit of sewage it's ever

873

00:38:44,829 --> 00:38:41,900

been in contact with doesn't sound very

874

00:38:46,770 --> 00:38:44,839

nice it's forward science or it's not

875

00:38:50,440 --> 00:38:46,780

even flawed science it's flawed alchemy

876

00:38:53,069 --> 00:38:50,450

so with dr. Musgrave we became guinea

877

00:38:56,109 --> 00:38:53,079

pigs testing the sleep and insomnia

878

00:38:58,210 --> 00:38:56,119

tablets made by the large South

879

00:39:01,089 --> 00:38:58,220

Australian homeopathic medicine

880

00:39:03,460 --> 00:39:01,099

manufacturer brow is only tablets in

881

00:39:05,140 --> 00:39:03,470

here you're going to take 40 I'm going

882

00:39:06,790 --> 00:39:05,150

to take 40 then I'm going to interview

883

00:39:08,680 --> 00:39:06,800

you and let's see how we feel at the end

884

00:39:10,180 --> 00:39:08,690

of the interview well if I fall asleep

885

00:39:14,470 --> 00:39:10,190

during the interview you know it's

886

00:39:15,819 --> 00:39:14,480

working what if I do then they're not

887

00:39:19,210 --> 00:39:15,829

just keep on talking I'm very good at

888

00:39:23,829 --> 00:39:19,220

that ok well let's overdose on these

889

00:39:26,470 --> 00:39:23,839

sleeping pills of course we strongly

890

00:39:29,500 --> 00:39:26,480

advise against doing this with any other

891

00:39:32,890 --> 00:39:29,510

sleeping pills but you'll soon see what

892

00:39:34,800 --> 00:39:32,900

happens to us still homeopaths of the

893

00:39:37,420 --> 00:39:34,810

homeopathic association's national

894

00:39:40,030 --> 00:39:37,430

president Michelle Holcomb remain

895

00:39:42,609 --> 00:39:40,040

resolute the way the medicines are made

896

00:39:44,440 --> 00:39:42,619

is very hard for the scientific body to

897

00:39:47,890 --> 00:39:44,450

get their heads around that it is it is

898

00:39:49,930 --> 00:39:47,900

a difficult area and people think that

899

00:39:53,130 --> 00:39:49,940

one day quantum physics will be able to

900

00:39:55,210 --> 00:39:53,140

explain just how such ultra dilutions of

901
00:39:57,530 --> 00:39:55,220
substances can still have a medicinal

902
00:39:59,260 --> 00:39:57,540
effect Nicole Reynolds

903
00:40:02,030 --> 00:39:59,270
is one of Michelle's clients and

904
00:40:05,120 --> 00:40:02,040
maintains it works for her and her

905
00:40:07,130 --> 00:40:05,130
children I guess seeing it's worked for

906
00:40:09,650 --> 00:40:07,140
250 years and it's spread over the world

907
00:40:11,030 --> 00:40:09,660
and millions of people use it can't be

908
00:40:13,400 --> 00:40:11,040
too bad there must be something in it

909
00:40:16,120 --> 00:40:13,410
homeopathy is a complementary medicine

910
00:40:18,710 --> 00:40:16,130
it can be used in conjunction with other

911
00:40:21,140 --> 00:40:18,720
therapies and treatments and regular

912
00:40:23,420 --> 00:40:21,150
Orthodox medical treatment Michelle

913
00:40:26,210 --> 00:40:23,430

hukum claims there are many studies

914

00:40:29,450 --> 00:40:26,220

which support homeopathy much of them

915

00:40:31,760 --> 00:40:29,460

not independently scrutinized it's very

916

00:40:34,130 --> 00:40:31,770

hard to measure homeopathy with the

917

00:40:36,410 --> 00:40:34,140

using the benchmark of the randomized

918

00:40:38,540 --> 00:40:36,420

clinical trial and the reason for that

919

00:40:42,320 --> 00:40:38,550

is because of the individualized nature

920

00:40:44,830 --> 00:40:42,330

of the treatment itself o my lord o my

921

00:40:47,720 --> 00:40:44,840

counter Cinderella do it in this dress

922

00:40:50,060 --> 00:40:47,730

but Fanning the flames of popular

923

00:40:52,400 --> 00:40:50,070

support for this bizarre industry are

924

00:40:55,730 --> 00:40:52,410

the rich and famous like actress

925

00:40:58,880 --> 00:40:55,740

Catherine zeta-jones singers Tina Turner

926
00:41:02,360 --> 00:40:58,890
and share the Beckham's and the royal

927
00:41:04,820 --> 00:41:02,370
family in fact the Queen's physician dr.

928
00:41:08,090 --> 00:41:04,830
peter fisher is a champion for the

929
00:41:11,090 --> 00:41:08,100
floored cause i have never seen a

930
00:41:13,250 --> 00:41:11,100
credible scientific study that backs up

931
00:41:15,320 --> 00:41:13,260
homeopathy in fact the UK government

932
00:41:17,360 --> 00:41:15,330
last year did a completely independent

933
00:41:20,870 --> 00:41:17,370
look in all the studies of homeopathy

934
00:41:24,110 --> 00:41:20,880
and concluded that there was no credible

935
00:41:26,600 --> 00:41:24,120
evidence for it homeopathy is back where

936
00:41:29,910 --> 00:41:26,610
it started without any credible

937
00:41:32,160 --> 00:41:29,920
scientific explanation

938
00:41:35,400 --> 00:41:32,170

that won't stop millions of people

939

00:41:38,050 --> 00:41:35,410

putting their faith in it but science is

940

00:41:41,770 --> 00:41:38,060

confident

941

00:41:43,780 --> 00:41:41,780

homeopathy is impossible that was the

942

00:41:46,390 --> 00:41:43,790

conclusion in an exhaustive

943

00:41:50,200 --> 00:41:46,400

comprehensive experiment conducted by

944

00:41:53,320 --> 00:41:50,210

the BBC using eminent British scientists

945

00:41:56,680 --> 00:41:53,330

at stake a million dollars put up by

946

00:41:59,170 --> 00:41:56,690

skeptic James Randi if proved that it

947

00:42:01,570 --> 00:41:59,180

worked homeopathy is one of the biggest

948

00:42:04,300 --> 00:42:01,580

health stands in America and it's a

949

00:42:06,700 --> 00:42:04,310

problem around the globe his cash is

950

00:42:08,620 --> 00:42:06,710

still up for grabs along with one

951
00:42:11,680 --> 00:42:08,630
hundred thousand dollars from Richard

952
00:42:14,680 --> 00:42:11,690
Saunders and twenty thousand offered by

953
00:42:17,350 --> 00:42:14,690
Simon Singh author of the best seller

954
00:42:20,560 --> 00:42:17,360
trick or treatment so conventional

955
00:42:23,430 --> 00:42:20,570
medicine and science and rationalism has

956
00:42:25,750 --> 00:42:23,440
brought us a huge amount of good and and

957
00:42:27,760 --> 00:42:25,760
it's worrying that there's been this

958
00:42:30,400 --> 00:42:27,770
rise and its undoubted there's a rise in

959
00:42:32,530 --> 00:42:30,410
alternative therapies and many of them

960
00:42:36,160 --> 00:42:32,540
are unproven disproven downright

961
00:42:38,590 --> 00:42:36,170
dangerous and the most disturbing and

962
00:42:41,830 --> 00:42:38,600
tragic case against it is that of Sydney

963
00:42:44,500 --> 00:42:41,840

homeopath Thomas Sam and his wife Manju

964

00:42:46,150 --> 00:42:44,510

are now serving a jail term for the

965

00:42:49,270 --> 00:42:46,160

manslaughter of their baby daughter

966

00:42:51,910 --> 00:42:49,280

Gloria after they chose homeopathic

967

00:42:54,580 --> 00:42:51,920

remedies ahead of conventional medicine

968

00:42:57,070 --> 00:42:54,590

to treat the child's serious skin

969

00:42:59,530 --> 00:42:57,080

disorder oddly enough I wouldn't be able

970

00:43:00,700 --> 00:42:59,540

to treat anybody's pets if you're going

971

00:43:02,920 --> 00:43:00,710

to treat an animal you have to be a

972

00:43:04,810 --> 00:43:02,930

fully qualified vet but to truly human

973

00:43:07,000 --> 00:43:04,820

it seems like anybody's allowed to do

974

00:43:09,160 --> 00:43:07,010

that and there's that there's a real

975

00:43:12,550 --> 00:43:09,170

danger associated with that you'll find

976
00:43:17,410 --> 00:43:12,560
that a lot of the homeopathic medicines

977
00:43:20,470 --> 00:43:17,420
are registered under a slightly lower

978
00:43:23,080 --> 00:43:20,480
scale of evidence then the medicines

979
00:43:25,090 --> 00:43:23,090
that we normally take alarmingly there

980
00:43:27,310 --> 00:43:25,100
are some homeopaths who peddle their

981
00:43:30,490 --> 00:43:27,320
concoctions as alternatives to

982
00:43:32,860 --> 00:43:30,500
vaccinations all this loony advice to

983
00:43:35,200 --> 00:43:32,870
treat radiation sickness which was

984
00:43:37,960 --> 00:43:35,210
distributed in the wake of the problems

985
00:43:41,230 --> 00:43:37,970
from the damaged Japanese nuclear power

986
00:43:42,700 --> 00:43:41,240
plant the idea that these sugar pills

987
00:43:45,700 --> 00:43:42,710
can be used to help people with

988
00:43:49,270 --> 00:43:45,710

radiation sickness or as a substitute

989

00:43:51,190 --> 00:43:49,280

for childhood vaccinations is ludicrous

990

00:43:51,680 --> 00:43:51,200

it's dangerous and these people should

991

00:43:53,420 --> 00:43:51,690

be

992

00:43:55,370 --> 00:43:53,430

executed for putting people's lives in

993

00:43:57,410 --> 00:43:55,380

danger like i said it's very sweet I'm

994

00:44:00,200 --> 00:43:57,420

enjoying the sugary taste however no

995

00:44:03,589 --> 00:44:00,210

chance of any harm for dr. Musgrave and

996

00:44:07,190 --> 00:44:03,599

me after our fix which tasted more like

997

00:44:10,220 --> 00:44:07,200

sugar oh look out tablets about 20

998

00:44:14,660 --> 00:44:10,230

minutes ago you're feeling well I must

999

00:44:16,849 --> 00:44:14,670

say I'm feeling quite awake it doesn't

1000

00:44:18,980 --> 00:44:16,859

seem to have had an effect does it no no

1001
00:44:22,550 --> 00:44:18,990
but we probably should make this a

1002
00:44:24,410 --> 00:44:22,560
little bit longer to see if if we doze

1003
00:44:27,290 --> 00:44:24,420
off in the middle of our of speaking

1004
00:44:30,500 --> 00:44:27,300
these so-called medicines are really

1005
00:44:32,660 --> 00:44:30,510
expensive placebo gram for gram it's

1006
00:44:34,609 --> 00:44:32,670
more expensive than sterling silver you

1007
00:44:36,380 --> 00:44:34,619
get a much bigger bang for your buck

1008
00:44:39,079 --> 00:44:36,390
with the good old fashioned jelly beans

1009
00:44:41,300 --> 00:44:39,089
we wanted to talk to brown natural

1010
00:44:43,450 --> 00:44:41,310
medicine about their products but after

1011
00:44:46,400 --> 00:44:43,460
initially agreeing they backed out

1012
00:44:48,650 --> 00:44:46,410
Richard Saunders says it's time for our

1013
00:44:50,900 --> 00:44:48,660

health officials to get tough on the

1014

00:44:52,760 --> 00:44:50,910

whole industry I think the health

1015

00:44:54,290 --> 00:44:52,770

authorities have been reluctant to act

1016

00:44:55,940 --> 00:44:54,300

against this stuff because there's

1017

00:44:58,579 --> 00:44:55,950

nothing in it there's nothing for them

1018

00:45:01,700 --> 00:44:58,589

to act against but what we want to see

1019

00:45:04,430 --> 00:45:01,710

happen tomorrow is these labels stuck on

1020

00:45:06,050 --> 00:45:04,440

every packet of homeopathy it's not

1021

00:45:12,349 --> 00:45:06,060

medicine and the public need to know

1022

00:45:14,599 --> 00:45:12,359

that and ironically the Therapeutic

1023

00:45:16,609 --> 00:45:14,609

Goods Administration tells us the area

1024

00:45:18,770 --> 00:45:16,619

remains unregulated because the

1025

00:45:21,440 --> 00:45:18,780

medicines are low risk and contain low

1026
00:45:24,050 --> 00:45:21,450
concentrations of ingredients or as we

1027
00:45:26,599 --> 00:45:24,060
found mainly sugar or water however the

1028
00:45:28,790 --> 00:45:26,609
TGA says it is developing new guidelines

1029
00:45:31,010 --> 00:45:28,800
to ensure they remain safe but again as

1030
00:45:38,999 --> 00:45:31,020
Frank discovered there seems to be no

1031
00:45:45,099 --> 00:45:41,589
we take you now to a conversation being

1032
00:45:47,589 --> 00:45:45,109
shattered across a hillside what I said

1033
00:45:50,799 --> 00:45:47,599
I'm trying to come up with a browser for

1034
00:45:54,579 --> 00:45:50,809
this podcast podcast the geologic

1035
00:45:56,950 --> 00:45:54,589
podcast water geologic podcast Oh Hobbs

1036
00:45:59,140 --> 00:45:56,960
pointless meanderings skeptical

1037
00:46:01,539 --> 00:45:59,150
observations ridiculous musical

1038
00:46:03,910 --> 00:46:01,549

interludes and not the hint of geology

1039

00:46:06,309 --> 00:46:03,920

all right maybe a little bit of geology

1040

00:46:08,920 --> 00:46:06,319

what's not worth it achenbach he's got

1041

00:46:11,410 --> 00:46:08,930

the religious bore out of the week she

1042

00:46:13,870 --> 00:46:11,420

owes about grades jay-z lyrics pointless

1043

00:46:16,569 --> 00:46:13,880

ask George who cares what the Boston

1044

00:46:18,729 --> 00:46:16,579

face is just a fun beach the horoscope

1045

00:46:21,849 --> 00:46:18,739

gotta be shot in the Bible morning guys

1046

00:46:23,890 --> 00:46:21,859

its on science stupid your adventures of

1047

00:46:25,719 --> 00:46:23,900

the Philadelphia funk authority what

1048

00:46:27,549 --> 00:46:25,729

Ukrainian boy playing drums the funk

1049

00:46:30,069 --> 00:46:27,559

band must be fascinating but none of

1050

00:46:33,779 --> 00:46:30,079

that is appealing even a we beat right

1051
00:46:40,590 --> 00:46:33,789
dad two min then I would find a sweet

1052
00:46:40,600 --> 00:46:47,430
geologic podcast pointless but free

1053
00:46:47,440 --> 00:47:01,010
children podcast

1054
00:47:04,830 --> 00:47:03,300
thank you for listening to the skeptic

1055
00:47:07,320 --> 00:47:04,840
zone hey listen if you thought that

1056
00:47:09,960 --> 00:47:07,330
Frank bangalow the reporter on today

1057
00:47:12,900 --> 00:47:09,970
tonight the guy you just heard doing the

1058
00:47:16,740 --> 00:47:12,910
homeopathy story did a good report and I

1059
00:47:20,000 --> 00:47:16,750
think he did if you google today tonight

1060
00:47:24,060 --> 00:47:20,010
and Adelaide you can leave a message

1061
00:47:27,750 --> 00:47:24,070
encouraging and supporting what they did

1062
00:47:29,550 --> 00:47:27,760
because I think at times the media don't

1063
00:47:32,460 --> 00:47:29,560

really come to our help but sometimes

1064

00:47:35,010 --> 00:47:32,470

they come through with a with bells on

1065

00:47:37,140 --> 00:47:35,020

and that was a great report so thanks to

1066

00:47:40,170 --> 00:47:37,150

today tonight and thank you for

1067

00:47:43,050 --> 00:47:40,180

listening to the skeptic zone lots more

1068

00:47:44,910 --> 00:47:43,060

coming up as always and I look forward

1069

00:47:47,700 --> 00:47:44,920

to your company and I hope you look

1070

00:47:50,130 --> 00:47:47,710

forward to our company next week until

1071

00:47:56,790 --> 00:47:50,140

then this is Richard Saunders signing

1072

00:48:00,060 --> 00:47:56,800

off from Sydney Australia you've been

1073

00:48:04,650 --> 00:48:00,070

listening to the skeptic zone visit our

1074

00:48:07,080 --> 00:48:04,660

website at www.skepticzoneTV.com for