

1  
00:00:20,660 --> 00:00:26,839  
hello and welcome to the skeptic zone

2  
00:00:23,339 --> 00:00:29,600  
show number 42 for the 7th of August

3  
00:00:26,839 --> 00:00:32,519  
2009 Richard Saunders here with you

4  
00:00:29,600 --> 00:00:35,969  
getting over the dreaded skeptic flu

5  
00:00:32,520 --> 00:00:38,130  
once again on today's show first up is

6  
00:00:35,969 --> 00:00:40,738  
an interview with mythbuster and skeptic

7  
00:00:38,130 --> 00:00:43,770  
Adam Savage then we have an interview

8  
00:00:40,738 --> 00:00:46,169  
with Professor Leone Rennie from Western

9  
00:00:43,770 --> 00:00:49,650  
Australia and we hear her take on

10  
00:00:46,170 --> 00:00:51,679  
science communication and education but

11  
00:00:49,649 --> 00:00:54,838  
before we start a special announcement

12  
00:00:51,679 --> 00:00:57,479  
the Australian skeptics via our patron

13  
00:00:54,838 --> 00:01:00,390  
dick smith yesterday released an open

14  
00:00:57,479 --> 00:01:02,099  
letter in the Australian newspaper you

15  
00:01:00,390 --> 00:01:06,599  
can see this letter by clicking the link

16  
00:01:02,100 --> 00:01:09,210  
at ww skeptic zone TV this letter aimed

17  
00:01:06,599 --> 00:01:11,459  
at parents of Australia outlines our

18  
00:01:09,209 --> 00:01:14,489  
concerns with the antics of the

19  
00:01:11,459 --> 00:01:16,169  
Australian vaccination Network a group

20  
00:01:14,489 --> 00:01:18,689  
well known to listeners of the skeptic

21  
00:01:16,170 --> 00:01:22,019  
zone we'll keep you updated as this

22  
00:01:18,689 --> 00:01:24,810  
story develops but for now sit back have

23  
00:01:22,019 --> 00:01:27,599  
a nice glass of champagne and enjoy this

24  
00:01:24,810 --> 00:01:30,710  
interview as Iran sir give talks with

25  
00:01:27,599 --> 00:01:30,709  
Adam Savage

26  
00:01:42,549 --> 00:01:46,970  
Adam Savage she's a modular

27  
00:01:44,629 --> 00:01:49,670  
special-effects expert and co-host of

28  
00:01:46,969 --> 00:01:51,289  
the Mythbusters television show Adam

29

00:01:49,670 --> 00:01:53,269  
attended the amazing meeting seven in

30  
00:01:51,289 --> 00:01:54,920  
Las Vegas where I caught up with him to

31  
00:01:53,269 --> 00:02:01,670  
talk about his career being a skeptic

32  
00:01:54,920 --> 00:02:04,129  
and a lot more Adam welcome to the

33  
00:02:01,670 --> 00:02:05,659  
skeptic sound thank you can you tell us

34  
00:02:04,129 --> 00:02:07,609  
a little bit about what you have

35  
00:02:05,659 --> 00:02:13,040  
presented here at that time I'm giving a

36  
00:02:07,609 --> 00:02:15,310  
talk on failure basically in short you

37  
00:02:13,039 --> 00:02:17,269  
hear a lot of people who enjoy

38  
00:02:15,310 --> 00:02:20,420  
reasonable amount of success in a life

39  
00:02:17,269 --> 00:02:22,909  
talk about how important factor failing

40  
00:02:20,419 --> 00:02:27,079  
was in that success that they stumbled

41  
00:02:22,909 --> 00:02:29,030  
and along their way but most interviews

42  
00:02:27,080 --> 00:02:31,700  
with people who are successful look like

43  
00:02:29,030 --> 00:02:33,739

their lives are a linear path just

44

00:02:31,699 --> 00:02:36,439

straight up towards the success that

45

00:02:33,739 --> 00:02:37,789

currently enjoy and I wanted to I was

46

00:02:36,439 --> 00:02:39,949

thinking about it i thought i've never

47

00:02:37,789 --> 00:02:41,780

heard someone tell really unvarnished

48

00:02:39,949 --> 00:02:44,298

stories about screwing something up from

49

00:02:41,780 --> 00:02:46,849

start to finish and so I came up with a

50

00:02:44,299 --> 00:02:49,489

couple of tales from my past of episodes

51

00:02:46,849 --> 00:02:52,608

where I completely screwed something up

52

00:02:49,489 --> 00:02:59,870

and I mean hurt people that I loved lost

53

00:02:52,609 --> 00:03:01,280

friends lost money and I also upon

54

00:02:59,870 --> 00:03:02,659

thinking about it realized that that is

55

00:03:01,280 --> 00:03:05,090

actually what makes a good skeptic

56

00:03:02,659 --> 00:03:07,669

somebody who has stumbled and recover

57

00:03:05,090 --> 00:03:09,500

who has had their mind changed or who

58  
00:03:07,669 --> 00:03:11,659  
realizes that they're fallible I mean

59  
00:03:09,500 --> 00:03:13,129  
dogmatism is nothing if not someone who

60  
00:03:11,659 --> 00:03:15,500  
believes that their opinion can't be

61  
00:03:13,129 --> 00:03:18,109  
shifted and skeptic is someone who

62  
00:03:15,500 --> 00:03:19,639  
realizes that it can when you gave that

63  
00:03:18,109 --> 00:03:22,280  
talk you to find yourself as a skeptic

64  
00:03:19,639 --> 00:03:26,920  
and I'm just wondering whether that

65  
00:03:22,280 --> 00:03:29,030  
really is your definition of yourself or

66  
00:03:26,919 --> 00:03:30,469  
do you even have a definition of

67  
00:03:29,030 --> 00:03:32,209  
yourself what do you find yourself in

68  
00:03:30,469 --> 00:03:36,259  
many different ways that's a good

69  
00:03:32,209 --> 00:03:37,670  
question i started doing Mythbusters

70  
00:03:36,259 --> 00:03:39,229  
because somebody offered me a job in

71  
00:03:37,669 --> 00:03:41,988  
television and it turned out to be a

72  
00:03:39,229 --> 00:03:44,419  
great job it turned out to be a job that

73  
00:03:41,989 --> 00:03:45,890  
i was uniquely suited for one that I

74  
00:03:44,419 --> 00:03:47,359  
loved and one that I have a sense of

75  
00:03:45,889 --> 00:03:48,679  
ownership over that I would have never

76  
00:03:47,360 --> 00:03:51,650  
foreseen when I started

77  
00:03:48,680 --> 00:03:53,810  
doing it and in the course of doing

78  
00:03:51,650 --> 00:03:55,280  
Mythbusters I we didn't set out to make

79  
00:03:53,810 --> 00:03:58,938  
a show that was about critical thinking

80  
00:03:55,280 --> 00:04:01,280  
or skepticism it just happened that way

81  
00:03:58,938 --> 00:04:05,229  
so no you're right that I don't define

82  
00:04:01,280 --> 00:04:09,318  
myself as a skeptic but I I do recognize

83  
00:04:05,229 --> 00:04:11,119  
all of the aspects of a true skeptic in

84  
00:04:09,318 --> 00:04:12,560  
my in my personality and in the work

85  
00:04:11,120 --> 00:04:16,009  
that I do and I think the movement

86

00:04:12,560 --> 00:04:18,649  
itself is needs as much help as it can

87  
00:04:16,009 --> 00:04:20,689  
get absolutely people should be should

88  
00:04:18,649 --> 00:04:22,879  
be aware about critical thinking and

89  
00:04:20,689 --> 00:04:24,709  
being skeptical towards fantastic claims

90  
00:04:22,879 --> 00:04:28,009  
and you know I take that mission

91  
00:04:24,709 --> 00:04:30,019  
seriously and obviously that we you've

92  
00:04:28,009 --> 00:04:31,370  
been told many times in the past and

93  
00:04:30,019 --> 00:04:32,959  
you're obviously aware of it that the

94  
00:04:31,370 --> 00:04:35,329  
show is highly skeptical it shows how

95  
00:04:32,959 --> 00:04:37,269  
science works and critical thinking but

96  
00:04:35,329 --> 00:04:41,300  
as far as I'm aware there's never been

97  
00:04:37,269 --> 00:04:44,180  
any real discussion of that on the show

98  
00:04:41,300 --> 00:04:45,710  
it's it just happens is that correct oh

99  
00:04:44,180 --> 00:04:47,389  
yeah well I think that's actually quite

100  
00:04:45,709 --> 00:04:50,089

scientific I mean we're not telling you

101

00:04:47,389 --> 00:04:51,710

that see I don't think you when you

102

00:04:50,089 --> 00:04:53,689

start to look at if you want to figure

103

00:04:51,709 --> 00:04:54,978

something out the method by figuring it

104

00:04:53,689 --> 00:04:57,288

out turns out to be the scientific

105

00:04:54,978 --> 00:04:59,209

method is the scientific method is just

106

00:04:57,288 --> 00:05:02,839

a name for a natural way that humans

107

00:04:59,209 --> 00:05:04,848

learn which is to build each of your

108

00:05:02,839 --> 00:05:06,859

conclusions upon data you've gathered in

109

00:05:04,848 --> 00:05:08,860

previous tests and and move forward

110

00:05:06,860 --> 00:05:13,520

towards illuminating what you don't know

111

00:05:08,860 --> 00:05:14,870

and you know Michael Shermer gave a talk

112

00:05:13,519 --> 00:05:16,930

this morning about the fact that you

113

00:05:14,870 --> 00:05:19,668

know every one of a particular political

114

00:05:16,930 --> 00:05:21,139

bent believes that their politics are

115  
00:05:19,668 --> 00:05:25,430  
the truth and that everyone else is

116  
00:05:21,139 --> 00:05:28,970  
politicized yes but I do believe that

117  
00:05:25,430 --> 00:05:31,129  
when it comes to science it's not a

118  
00:05:28,970 --> 00:05:33,979  
political stance to be scientific about

119  
00:05:31,129 --> 00:05:36,649  
something it's not a political stance to

120  
00:05:33,978 --> 00:05:38,300  
be skeptical so no I don't think it

121  
00:05:36,649 --> 00:05:40,158  
requires talking about any more than it

122  
00:05:38,300 --> 00:05:42,500  
requires us to talk about being atheists

123  
00:05:40,158 --> 00:05:44,649  
on that show I was talking I think I was

124  
00:05:42,500 --> 00:05:46,699  
thinking more about formalizing the

125  
00:05:44,649 --> 00:05:49,219  
notion of critical thinking and

126  
00:05:46,699 --> 00:05:51,500  
explaining about controls and maybe I'll

127  
00:05:49,220 --> 00:05:54,110  
ask her a more specific question have

128  
00:05:51,500 --> 00:05:57,389  
you thought about doing perhaps a show

129  
00:05:54,110 --> 00:05:59,460  
or videos accompanying videos that

130  
00:05:57,389 --> 00:06:01,199  
would actually discuss the scientific

131  
00:05:59,459 --> 00:06:02,789  
method be more educational perhaps even

132  
00:06:01,199 --> 00:06:05,699  
be suited to specific curricula

133  
00:06:02,790 --> 00:06:07,319  
interesting actually I often say that if

134  
00:06:05,699 --> 00:06:08,969  
we had set out to make a show that was

135  
00:06:07,319 --> 00:06:13,529  
really educational we would have failed

136  
00:06:08,970 --> 00:06:15,450  
miserably the fact is we understand that

137  
00:06:13,529 --> 00:06:18,089  
we tell a story we understand that story

138  
00:06:15,449 --> 00:06:20,219  
has elements to it about illuminating

139  
00:06:18,089 --> 00:06:22,619  
concepts to people but the show is

140  
00:06:20,220 --> 00:06:25,830  
really driven by the Jamie's and my

141  
00:06:22,620 --> 00:06:27,209  
curiosity and we take that measured

142  
00:06:25,829 --> 00:06:32,339  
really seriously all the other stuff

143

00:06:27,209 --> 00:06:34,620  
tends to be I do believe there's a great

144  
00:06:32,339 --> 00:06:36,179  
curriculum in Mythbusters it's not

145  
00:06:34,620 --> 00:06:39,180  
something we have the time or the

146  
00:06:36,180 --> 00:06:41,939  
ability to do while we're filming 20

147  
00:06:39,180 --> 00:06:44,600  
some-odd shows per year 45 weeks a year

148  
00:06:41,939 --> 00:06:47,670  
10 hours a day five days a week and

149  
00:06:44,600 --> 00:06:51,090  
there are there are some there are some

150  
00:06:47,670 --> 00:06:52,379  
good books out there there's thousands

151  
00:06:51,089 --> 00:06:54,599  
of science teachers all over the world

152  
00:06:52,379 --> 00:06:56,399  
talking every Thursday morning after our

153  
00:06:54,600 --> 00:06:59,879  
show airs with their students about the

154  
00:06:56,399 --> 00:07:01,049  
stuff that we're doing but we have we

155  
00:06:59,879 --> 00:07:02,370  
just don't have the ability to build

156  
00:07:01,050 --> 00:07:04,020  
that curriculum right now now you

157  
00:07:02,370 --> 00:07:08,009

mentioned the number of shows and how

158

00:07:04,019 --> 00:07:10,620

much hard work it is by last count I

159

00:07:08,009 --> 00:07:13,920

think you've done 125 shows so actually

160

00:07:10,620 --> 00:07:15,810

yeah we're currently filming I think 131

161

00:07:13,920 --> 00:07:19,410

but and that doesn't take into account

162

00:07:15,810 --> 00:07:20,550

the 25 30 some odd hours of specials

163

00:07:19,410 --> 00:07:24,170

that we've done so we've done i think

164

00:07:20,550 --> 00:07:27,720

close to 100 and close to a solid week

165

00:07:24,170 --> 00:07:30,120

168 hours a solid week 24 hours a day

166

00:07:27,720 --> 00:07:31,770

seven days of Mythbusters that's

167

00:07:30,120 --> 00:07:33,899

absolutely amazing and how do you keep

168

00:07:31,769 --> 00:07:35,579

fresh after I mean it's been seven years

169

00:07:33,899 --> 00:07:38,159

or seven eight years and and all that

170

00:07:35,579 --> 00:07:39,569

many shows how do you keep fresh how do

171

00:07:38,160 --> 00:07:41,010

you keep excited about it because he

172  
00:07:39,569 --> 00:07:42,899  
already it's quite obvious see the shows

173  
00:07:41,009 --> 00:07:44,459  
that you are excited yeah well like I

174  
00:07:42,899 --> 00:07:47,009  
said the sense of ownership is just

175  
00:07:44,459 --> 00:07:49,199  
increases every year Jamie and I started

176  
00:07:47,009 --> 00:07:50,610  
out as hired talent on a show that we

177  
00:07:49,199 --> 00:07:54,000  
all sort of figure out how to make at

178  
00:07:50,610 --> 00:07:56,310  
the same time and we are now you know

179  
00:07:54,000 --> 00:07:59,759  
effectively exactly the producers of

180  
00:07:56,310 --> 00:08:01,740  
this show we have a huge hand in content

181  
00:07:59,759 --> 00:08:06,029  
in the content direction and it's

182  
00:08:01,740 --> 00:08:09,300  
explication and the the core team of

183  
00:08:06,029 --> 00:08:11,038  
Jamie I Jamie me

184  
00:08:09,300 --> 00:08:12,478  
our director producer Alice tallow and

185  
00:08:11,038 --> 00:08:17,279  
our executive booster no Australia Dan

186  
00:08:12,478 --> 00:08:19,318  
tapster the four of us cares so deeply

187  
00:08:17,279 --> 00:08:22,168  
about this material and have so much fun

188  
00:08:19,319 --> 00:08:24,509  
with it i mean we argue constantly the

189  
00:08:22,168 --> 00:08:26,008  
right idea always wins out because it's

190  
00:08:24,509 --> 00:08:29,098  
really apparent to everyone once it

191  
00:08:26,009 --> 00:08:31,259  
shows up in the room and there's still

192  
00:08:29,098 --> 00:08:33,059  
plenty of material I mean we're we've

193  
00:08:31,259 --> 00:08:35,399  
got you know on our master list

194  
00:08:33,059 --> 00:08:37,949  
something like 250 stories that we can

195  
00:08:35,399 --> 00:08:39,778  
still do eternity's that major stories

196  
00:08:37,950 --> 00:08:43,200  
because you know that would be probably

197  
00:08:39,778 --> 00:08:45,528  
another 125 hours of Mythbusters okay my

198  
00:08:43,200 --> 00:08:49,920  
kids are very happy right now here is

199  
00:08:45,528 --> 00:08:52,320  
now you know you know those hundred and

200

00:08:49,919 --> 00:08:53,549  
sixty eight hours of shows that what

201  
00:08:52,320 --> 00:08:57,209  
would you say was the most memorable

202  
00:08:53,549 --> 00:09:00,389  
adventure that you've had it's it's it's

203  
00:08:57,208 --> 00:09:02,639  
nearly impossible to say I mean because

204  
00:09:00,389 --> 00:09:06,360  
we've done so many I mean eight hundred

205  
00:09:02,639 --> 00:09:07,588  
some-odd different experiments and we're

206  
00:09:06,360 --> 00:09:11,009  
doing something different literally

207  
00:09:07,589 --> 00:09:12,990  
every five or six days the most recent

208  
00:09:11,009 --> 00:09:15,600  
really amazing thing was I got to fly in

209  
00:09:12,990 --> 00:09:17,370  
an f-18 Hornet with the Blue Angels I

210  
00:09:15,600 --> 00:09:19,620  
got to break the sound barrier seven or

211  
00:09:17,370 --> 00:09:23,159  
eight times I got to pull seven and a

212  
00:09:19,620 --> 00:09:25,169  
half G's which made me pass out and

213  
00:09:23,159 --> 00:09:30,629  
throw up and it was totally intense and

214  
00:09:25,169 --> 00:09:33,778

completely amazing there are aspects of

215

00:09:30,629 --> 00:09:35,669

doing the show that vary depending on

216

00:09:33,778 --> 00:09:37,528

the episode there are episodes which I

217

00:09:35,669 --> 00:09:39,328

consider the science is the is is

218

00:09:37,528 --> 00:09:40,620

totally the best that we've ever been

219

00:09:39,328 --> 00:09:41,909

able to achieve things like bullets

220

00:09:40,620 --> 00:09:44,399

fired up or the penny from the Empire

221

00:09:41,909 --> 00:09:46,740

State Building or swimming in syrup

222

00:09:44,399 --> 00:09:49,289

there are episodes where I feel like the

223

00:09:46,740 --> 00:09:51,180

the the narrative itself is really

224

00:09:49,289 --> 00:09:54,240

thrilling and those are episodes like

225

00:09:51,179 --> 00:09:56,099

the Confederate rocket or Alcatraz

226

00:09:54,240 --> 00:09:57,060

escape and then their episodes which

227

00:09:56,100 --> 00:09:58,889

I've just considered the best

228

00:09:57,059 --> 00:10:00,809

description of how much fun the process

229  
00:09:58,889 --> 00:10:02,610  
is and that's led balloon that's my

230  
00:10:00,809 --> 00:10:04,889  
all-time favorite episode there's

231  
00:10:02,610 --> 00:10:09,329  
building a floating 14 foot diameter

232  
00:10:04,889 --> 00:10:12,870  
balloon out of 14 kilos and bled totally

233  
00:10:09,328 --> 00:10:15,028  
strong it was an amazing sale not you

234  
00:10:12,870 --> 00:10:19,379  
personally subject yourself to all kinds

235  
00:10:15,028 --> 00:10:23,788  
of experiments you almost drown and you

236  
00:10:19,379 --> 00:10:25,859  
I sit in a chair and and have drops of

237  
00:10:23,788 --> 00:10:27,838  
water dripping on your forehead I was

238  
00:10:25,859 --> 00:10:30,599  
just wondering whether you know of those

239  
00:10:27,839 --> 00:10:32,729  
experiments and experiences wherever you

240  
00:10:30,599 --> 00:10:36,089  
you've ever been really really scared I

241  
00:10:32,729 --> 00:10:37,829  
have been I have been I actually didn't

242  
00:10:36,089 --> 00:10:39,869  
nearly drown in the underwater car

243  
00:10:37,828 --> 00:10:41,188  
episode I was quite confident under the

244  
00:10:39,869 --> 00:10:45,629  
water I can hold my breath for almost

245  
00:10:41,188 --> 00:10:48,028  
two minutes the standing on the deck of

246  
00:10:45,629 --> 00:10:49,558  
the mythtanic which was a 28 ton steel

247  
00:10:48,028 --> 00:10:51,269  
boat waiting for it to sink and not

248  
00:10:49,558 --> 00:10:53,219  
knowing if it would suck me down when it

249  
00:10:51,269 --> 00:10:56,099  
went down was probably one of the

250  
00:10:53,220 --> 00:10:57,720  
scariest moments on the show that was

251  
00:10:56,099 --> 00:10:59,429  
one where we really didn't know what was

252  
00:10:57,720 --> 00:11:01,168  
going to happen we had safety divers we

253  
00:10:59,428 --> 00:11:03,318  
had paramedics and everything but we

254  
00:11:01,168 --> 00:11:06,318  
really didn't know and that was spooky

255  
00:11:03,318 --> 00:11:08,338  
for the most part at this point I

256  
00:11:06,318 --> 00:11:11,098  
volunteered for everything that I do I

257

00:11:08,339 --> 00:11:13,529  
want to do it I've wanted to try it I

258  
00:11:11,099 --> 00:11:14,879  
wanted to sit in a car while it sank in

259  
00:11:13,528 --> 00:11:17,908  
the water wanted to know what that was

260  
00:11:14,879 --> 00:11:19,649  
like it was awesome I want it you know I

261  
00:11:17,908 --> 00:11:22,078  
I want to be my own action hero and the

262  
00:11:19,649 --> 00:11:24,899  
show lets me try that out on that I have

263  
00:11:22,078 --> 00:11:28,918  
to ask did grant actually volunteered to

264  
00:11:24,899 --> 00:11:30,629  
smell your shoes were your feet yeah was

265  
00:11:28,918 --> 00:11:32,548  
he forced to do you know I can't speak

266  
00:11:30,629 --> 00:11:36,928  
for the other guy I he might have been

267  
00:11:32,548 --> 00:11:38,489  
first okay now you've obviously have to

268  
00:11:36,928 --> 00:11:40,019  
be very inventive in the way you you

269  
00:11:38,489 --> 00:11:44,100  
perform those experiments you have to

270  
00:11:40,019 --> 00:11:46,259  
build all kinds of rigs and invent a lot

271  
00:11:44,100 --> 00:11:47,639

of stuff but interested to know whether

272

00:11:46,259 --> 00:11:50,129

you've ever invented something that is

273

00:11:47,639 --> 00:11:53,519

actually a real invention as in

274

00:11:50,129 --> 00:11:56,369

patentable well I'm sure it's possible I

275

00:11:53,519 --> 00:11:59,220

know that we've done things in ways that

276

00:11:56,369 --> 00:12:02,428

I have never seen before when I built

277

00:11:59,220 --> 00:12:03,689

the the differential wind tunnel for the

278

00:12:02,428 --> 00:12:06,088

penny from the Empire State Building

279

00:12:03,688 --> 00:12:07,708

will kill you myth I had never seen a

280

00:12:06,089 --> 00:12:09,179

demonstration of a wind tone that had

281

00:12:07,708 --> 00:12:11,158

one speed at the bottom in a different

282

00:12:09,178 --> 00:12:13,048

speed at the top on the theory that the

283

00:12:11,158 --> 00:12:15,028

penny would have which has two different

284

00:12:13,048 --> 00:12:17,428

terminal velocities would tumble up and

285

00:12:15,028 --> 00:12:20,519

down with in that tube and it did and

286  
00:12:17,428 --> 00:12:22,078  
that was really thrilling to see that

287  
00:12:20,519 --> 00:12:23,818  
demonstration that was actually an early

288  
00:12:22,078 --> 00:12:27,238  
turning point for me in learning what my

289  
00:12:23,818 --> 00:12:29,128  
job was on the show was building a

290  
00:12:27,239 --> 00:12:31,430  
demonstration I thought was that elegant

291  
00:12:29,129 --> 00:12:33,649  
and lovely and without any

292  
00:12:31,429 --> 00:12:35,769  
without any guidebook or marker to work

293  
00:12:33,649 --> 00:12:39,919  
off of it gave me a lot of confidence

294  
00:12:35,769 --> 00:12:42,679  
okay your moon landing hoax episode is

295  
00:12:39,919 --> 00:12:45,769  
one of my personal favorites they're for

296  
00:12:42,679 --> 00:12:48,919  
obvious reasons do you plan to tackle

297  
00:12:45,769 --> 00:12:50,208  
any other conspiracy theories absolutely

298  
00:12:48,919 --> 00:12:52,179  
there on our list is that we have a

299  
00:12:50,208 --> 00:12:55,250  
whole nother hour of moon landing

300  
00:12:52,179 --> 00:12:57,049  
conspiracy theories the Kennedy

301  
00:12:55,250 --> 00:12:59,778  
assassination is one that shows up from

302  
00:12:57,049 --> 00:13:02,750  
time to time although the material is so

303  
00:12:59,778 --> 00:13:05,929  
grim the discovery which is a family

304  
00:13:02,750 --> 00:13:07,669  
network you know has a problem if we are

305  
00:13:05,929 --> 00:13:10,309  
going to start showing the Zapruder film

306  
00:13:07,669 --> 00:13:14,838  
on prime time on advertising supported

307  
00:13:10,309 --> 00:13:17,028  
cable absolutely for the most part you

308  
00:13:14,839 --> 00:13:18,950  
know people ask about testing the World

309  
00:13:17,028 --> 00:13:23,240  
Trade Center as a conspiracy theory and

310  
00:13:18,950 --> 00:13:26,028  
the problem we have with that is we know

311  
00:13:23,240 --> 00:13:28,039  
that we're not going to change anybody's

312  
00:13:26,028 --> 00:13:31,519  
mind unless we went full size and that's

313  
00:13:28,039 --> 00:13:34,278  
just not feasible yes so we stay away

314

00:13:31,519 --> 00:13:38,059  
from things where we recognize the test

315  
00:13:34,278 --> 00:13:39,708  
test is going to not demonstrate it's

316  
00:13:38,059 --> 00:13:41,479  
very hard to scale building materials

317  
00:13:39,708 --> 00:13:43,609  
it's very hard to scale materials and

318  
00:13:41,480 --> 00:13:45,379  
their behavioral characteristics and

319  
00:13:43,610 --> 00:13:47,269  
that would make trying to come up with a

320  
00:13:45,379 --> 00:13:49,610  
definitive answer on that test a losing

321  
00:13:47,269 --> 00:13:53,059  
proposition very likely and being

322  
00:13:49,610 --> 00:13:58,399  
explosion the prone to explosions you'd

323  
00:13:53,059 --> 00:14:00,500  
be blamed for exactly faking it is now

324  
00:13:58,399 --> 00:14:02,929  
in the past I remember had you an

325  
00:14:00,500 --> 00:14:05,240  
interview somewhere mentioning that you

326  
00:14:02,929 --> 00:14:08,059  
would like to bust the myth that

327  
00:14:05,240 --> 00:14:09,440  
evolution is not true right I'm I was

328  
00:14:08,059 --> 00:14:10,819

just really glad you phrased it that way

329

00:14:09,440 --> 00:14:13,220

yeah I know because you phrased it in

330

00:14:10,820 --> 00:14:14,870

here actually then I do remember that

331

00:14:13,220 --> 00:14:16,670

actually but maybe it was on the

332

00:14:14,870 --> 00:14:18,169

skeptics guide to the universe yeah it's

333

00:14:16,669 --> 00:14:21,439

a nice guy it's been corrected on my

334

00:14:18,169 --> 00:14:23,509

Wikipedia page goodness um but i'm just

335

00:14:21,440 --> 00:14:26,360

wondering whether you've made any steps

336

00:14:23,509 --> 00:14:28,539

in that direction and do you have any

337

00:14:26,360 --> 00:14:30,950

thoughts about how it might be done no I

338

00:14:28,539 --> 00:14:33,429

unfortunately I think there's we're in

339

00:14:30,950 --> 00:14:36,620

this we're in this zone where we're

340

00:14:33,429 --> 00:14:40,809

demonstrating evolution demonstrating

341

00:14:36,620 --> 00:14:43,480

natural selection is just very likely to

342

00:14:40,809 --> 00:14:48,939

exhaustively boring for the farm

343  
00:14:43,480 --> 00:14:52,120  
out of our particular show and to be

344  
00:14:48,940 --> 00:14:53,769  
quite honest it's not going no

345  
00:14:52,120 --> 00:14:56,049  
demonstration we did of that is actually

346  
00:14:53,769 --> 00:14:57,909  
going to satisfy young earth herbs who

347  
00:14:56,049 --> 00:14:59,708  
was actually who I was talking about

348  
00:14:57,909 --> 00:15:01,419  
when i was first saying that i was

349  
00:14:59,708 --> 00:15:02,649  
thinking oh you proved natural selection

350  
00:15:01,419 --> 00:15:04,360  
and get rid of the younger thurs but no

351  
00:15:02,649 --> 00:15:05,919  
actually younger thurs who believe the

352  
00:15:04,360 --> 00:15:07,480  
world is 6,000 years old actually do you

353  
00:15:05,919 --> 00:15:10,870  
believe in a form of super high-speed

354  
00:15:07,480 --> 00:15:12,909  
evolution that Noah somehow had one dog

355  
00:15:10,870 --> 00:15:15,070  
that grew in the last six thousand years

356  
00:15:12,909 --> 00:15:18,278  
to you know 27,000 different breeds or

357  
00:15:15,070 --> 00:15:19,540  
something like that so I think we're

358  
00:15:18,278 --> 00:15:21,399  
gonna have to leave that one for a

359  
00:15:19,539 --> 00:15:23,259  
different format of the show yeah I

360  
00:15:21,399 --> 00:15:25,809  
think Richard Lensky of your head of

361  
00:15:23,259 --> 00:15:27,939  
vilensky experiment with a école I know

362  
00:15:25,809 --> 00:15:29,469  
he's actually no no I haven't but it's

363  
00:15:27,940 --> 00:15:31,240  
taken 20 years i'm not sure you have

364  
00:15:29,470 --> 00:15:33,670  
that long what's that it's taken about

365  
00:15:31,240 --> 00:15:35,799  
20 years i was meticulously collecting

366  
00:15:33,669 --> 00:15:37,659  
material and sampling and freezing and

367  
00:15:35,799 --> 00:15:39,729  
his date is beautiful it's absolutely

368  
00:15:37,659 --> 00:15:41,528  
amazing because actually evolution in a

369  
00:15:39,730 --> 00:15:43,509  
lab reproducible because you can go back

370  
00:15:41,528 --> 00:15:45,789  
to any generation he wants yes and it

371

00:15:43,509 --> 00:15:47,889  
it's astonishing yeah the work is

372  
00:15:45,789 --> 00:15:51,549  
incredible I Valley we're not sure we

373  
00:15:47,889 --> 00:15:53,620  
would make very good television there if

374  
00:15:51,549 --> 00:15:56,679  
you ever done is Mythbusters show or

375  
00:15:53,620 --> 00:15:58,929  
something like it on stage um no people

376  
00:15:56,679 --> 00:16:00,879  
ask us to do that the problem is we are

377  
00:15:58,929 --> 00:16:03,669  
not a demonstration show we're an

378  
00:16:00,879 --> 00:16:05,289  
experimental Shelton is so the stuff

379  
00:16:03,669 --> 00:16:07,659  
that people would do on stage is a

380  
00:16:05,289 --> 00:16:09,759  
demonstration of a scientific concept

381  
00:16:07,659 --> 00:16:13,289  
and that totally doesn't interest us at

382  
00:16:09,759 --> 00:16:15,309  
all we don't we understand that we may

383  
00:16:13,289 --> 00:16:17,528  
like we did been slipping on a banana

384  
00:16:15,309 --> 00:16:18,759  
peel recently and if you're going to

385  
00:16:17,528 --> 00:16:20,110

investigate slipping on a banana peel

386

00:16:18,759 --> 00:16:21,578

you have to look at the difference

387

00:16:20,110 --> 00:16:24,220

between static and dynamic friction

388

00:16:21,578 --> 00:16:25,750

there are two different forces and both

389

00:16:24,220 --> 00:16:28,959

come into play on slipping on a banana

390

00:16:25,750 --> 00:16:33,068

peel so when I looked at when I started

391

00:16:28,958 --> 00:16:34,869

talking to a structure an engineer about

392

00:16:33,068 --> 00:16:36,250

that I was like that's great okay so we

393

00:16:34,870 --> 00:16:37,929

should do some tests that demonstrate

394

00:16:36,250 --> 00:16:40,028

the difference between static and

395

00:16:37,929 --> 00:16:43,838

dynamic friction and coefficients of

396

00:16:40,028 --> 00:16:45,610

friction and overcoming them etc but

397

00:16:43,839 --> 00:16:47,170

again that's only to illustrate this to

398

00:16:45,610 --> 00:16:49,120

get to the end of this story and figure

399

00:16:47,169 --> 00:16:50,708

out about banana peels I don't really

400  
00:16:49,120 --> 00:16:51,789  
care about doing a demonstration on

401  
00:16:50,708 --> 00:16:53,169  
stage about the difference between

402  
00:16:51,789 --> 00:16:54,219  
static and dynamic friction I don't

403  
00:16:53,169 --> 00:16:55,328  
think anyone else would want to watch it

404  
00:16:54,220 --> 00:16:56,920  
either

405  
00:16:55,328 --> 00:16:58,448  
really I think when people say they love

406  
00:16:56,919 --> 00:16:59,889  
us to do something on stage they mean

407  
00:16:58,448 --> 00:17:02,438  
they want us to blow something up and

408  
00:16:59,889 --> 00:17:04,298  
that's never going to happen so for the

409  
00:17:02,438 --> 00:17:05,678  
most part people are kind of out of

410  
00:17:04,298 --> 00:17:08,318  
luck when it comes to us doing

411  
00:17:05,679 --> 00:17:09,610  
myth-busting on stage I did have an idea

412  
00:17:08,318 --> 00:17:11,318  
of recently we got asked to do an

413  
00:17:09,609 --> 00:17:13,119  
appearance for 25,000 people and I did

414  
00:17:11,318 --> 00:17:15,428  
want to I still might want to try this

415  
00:17:13,119 --> 00:17:17,318  
in some kind of venue just to get

416  
00:17:15,429 --> 00:17:19,419  
everyone in the stadium to jump up at

417  
00:17:17,318 --> 00:17:22,480  
the same moment and see how far away we

418  
00:17:19,419 --> 00:17:25,720  
can read the resulting bump on Richter

419  
00:17:22,480 --> 00:17:27,159  
scales very interesting well from we are

420  
00:17:25,720 --> 00:17:29,288  
from Australian skeptics and we have a

421  
00:17:27,159 --> 00:17:31,269  
big convention at the end of 2010 and

422  
00:17:29,288 --> 00:17:33,129  
your production companies obviously

423  
00:17:31,269 --> 00:17:34,720  
Australian in fact I go past their

424  
00:17:33,130 --> 00:17:38,320  
officers every morning on my way to work

425  
00:17:34,720 --> 00:17:39,909  
yeah so we were thinking of that would

426  
00:17:38,319 --> 00:17:41,950  
be great if you could come to Australia

427  
00:17:39,909 --> 00:17:43,539  
and do something on stage I would look

428

00:17:41,950 --> 00:17:45,190  
well ok I can guarantee you we're not

429  
00:17:43,538 --> 00:17:46,750  
going to do something on stage but we've

430  
00:17:45,190 --> 00:17:48,880  
always wanted to get down under we've

431  
00:17:46,750 --> 00:17:51,548  
never even visited the home offices of

432  
00:17:48,880 --> 00:17:52,630  
our own production company and we know

433  
00:17:51,548 --> 00:17:54,940  
that there's at least a good two hours

434  
00:17:52,630 --> 00:17:56,500  
in Australian myths will definitely be

435  
00:17:54,940 --> 00:17:58,870  
in touch and hopefully we'll be able to

436  
00:17:56,500 --> 00:18:00,909  
do something about bringing us really

437  
00:17:58,869 --> 00:18:02,288  
yeah even not even just as guests yes

438  
00:18:00,909 --> 00:18:03,730  
you know you know whatever the video is

439  
00:18:02,288 --> 00:18:05,679  
I want to actually demonstrate how

440  
00:18:03,730 --> 00:18:07,630  
difficult it is to view the Coriolis

441  
00:18:05,679 --> 00:18:09,100  
force difference between above the

442  
00:18:07,630 --> 00:18:11,080

equator and below the equator that

443

00:18:09,099 --> 00:18:13,269

Australia is perfectly situated at a

444

00:18:11,079 --> 00:18:16,750

about this roughly the same latitude of

445

00:18:13,269 --> 00:18:20,980

San Francisco yeah Sydney is I think 33

446

00:18:16,750 --> 00:18:22,690

so what that 33 sounds right buzz and we

447

00:18:20,980 --> 00:18:25,630

could absolutely demonstrate it to

448

00:18:22,690 --> 00:18:27,399

chorus choral Coriolis force is real and

449

00:18:25,630 --> 00:18:28,360

that it does make things spin in

450

00:18:27,398 --> 00:18:30,398

opposite directions from my

451

00:18:28,359 --> 00:18:33,009

understanding of the science however it

452

00:18:30,398 --> 00:18:34,359

takes three or four days after pouring

453

00:18:33,009 --> 00:18:36,460

the water into a vessel to let the

454

00:18:34,359 --> 00:18:39,398

vessel settle get rid of everything but

455

00:18:36,460 --> 00:18:41,679

the Brownian motion and then to cleanly

456

00:18:39,398 --> 00:18:43,209

pull a plug it's very complicated i'm

457  
00:18:41,679 --> 00:18:45,159  
really looking forward to doing it yeah

458  
00:18:43,210 --> 00:18:47,620  
i've actually done a demonstration video

459  
00:18:45,159 --> 00:18:49,840  
with a with a rubber ducky 10 for a

460  
00:18:47,619 --> 00:18:52,148  
science show in Israel for so that's

461  
00:18:49,839 --> 00:18:53,619  
great it was very easy to make it go

462  
00:18:52,148 --> 00:18:55,719  
whichever way I want to do yeah yeah

463  
00:18:53,619 --> 00:18:59,168  
yeah what story to do stir the water a

464  
00:18:55,720 --> 00:19:01,389  
little bit message yes now a personal

465  
00:18:59,169 --> 00:19:04,669  
question perhaps you've you've been

466  
00:19:01,388 --> 00:19:06,528  
known to use Twitter to avoid paying

467  
00:19:04,669 --> 00:19:09,440  
I didn't anything to avoid paying their

468  
00:19:06,528 --> 00:19:12,679  
\$15,000 phone bill I use it to achieve

469  
00:19:09,440 --> 00:19:14,960  
what is right now the phone companies

470  
00:19:12,679 --> 00:19:16,730  
are still getting away with charging one

471  
00:19:14,960 --> 00:19:18,590  
two three cents per kilobyte just

472  
00:19:16,730 --> 00:19:19,700  
because no one's looking and people

473  
00:19:18,589 --> 00:19:22,579  
don't understand the difference between

474  
00:19:19,700 --> 00:19:24,769  
a kilobyte and kill a bit and an email

475  
00:19:22,579 --> 00:19:27,349  
and how much data is actually there and

476  
00:19:24,769 --> 00:19:33,079  
while no one quite understands that the

477  
00:19:27,349 --> 00:19:35,358  
phone company is robbing people so I

478  
00:19:33,079 --> 00:19:37,038  
absolutely I pay attention to the social

479  
00:19:35,358 --> 00:19:39,918  
networking sites i read gizmodo bling

480  
00:19:37,038 --> 00:19:41,720  
bling fart reddit all those sites every

481  
00:19:39,919 --> 00:19:43,009  
day I know the stories that have come up

482  
00:19:41,720 --> 00:19:44,569  
in people getting ins orbited phone

483  
00:19:43,009 --> 00:19:45,980  
bills for crossing a national border

484  
00:19:44,569 --> 00:19:47,269  
while they were downloading a movie on

485

00:19:45,980 --> 00:19:50,450  
their phone or something like that I

486  
00:19:47,269 --> 00:19:52,878  
knew it would be a good story and I

487  
00:19:50,450 --> 00:19:54,019  
tweeted with full knowledge that I would

488  
00:19:52,878 --> 00:19:57,408  
hopefully guilt to the phone company

489  
00:19:54,019 --> 00:19:59,450  
into granting a reprieve from the cost

490  
00:19:57,409 --> 00:20:01,009  
and they did almost immediately that's

491  
00:19:59,450 --> 00:20:03,288  
very nice of them would fame alone not

492  
00:20:01,009 --> 00:20:05,839  
have achieved that um you know what they

493  
00:20:03,288 --> 00:20:07,759  
claim not and i dunno i've gotten plenty

494  
00:20:05,839 --> 00:20:08,778  
of emails from people saying you know

495  
00:20:07,759 --> 00:20:10,099  
they're not famous they don't have a

496  
00:20:08,778 --> 00:20:11,720  
crapload of Twitter followers and they

497  
00:20:10,099 --> 00:20:13,730  
got the phone company to wipe the cost

498  
00:20:11,720 --> 00:20:15,230  
and honestly I've had big international

499  
00:20:13,730 --> 00:20:16,548

bills before that I've called up the

500

00:20:15,230 --> 00:20:18,798

phone company and said can you back date

501

00:20:16,548 --> 00:20:20,118

me to an international plan and charged

502

00:20:18,798 --> 00:20:22,278

me what I would have been paying and

503

00:20:20,118 --> 00:20:24,168

they've always agreed to do that phone

504

00:20:22,278 --> 00:20:27,349

companies don't want to screw you but in

505

00:20:24,169 --> 00:20:29,629

this I mean their first offer was well

506

00:20:27,349 --> 00:20:30,980

we can reduce it from 15,000 to 4,000

507

00:20:29,628 --> 00:20:34,128

and I'm like you're insane i surf the

508

00:20:30,980 --> 00:20:37,069

web for two and a half hours there is no

509

00:20:34,128 --> 00:20:39,528

the Space Shuttle pays 100 of that to

510

00:20:37,069 --> 00:20:40,819

receive data from NASA you're on crack

511

00:20:39,528 --> 00:20:43,308

if you think I'm going to pay it and

512

00:20:40,819 --> 00:20:45,470

I'll use every bit of my fame to make

513

00:20:43,308 --> 00:20:47,418

sure that you guys are guilted into

514  
00:20:45,470 --> 00:20:49,100  
releasing me from this obligation to

515  
00:20:47,419 --> 00:20:50,690  
their credit they were incredibly nice

516  
00:20:49,099 --> 00:20:52,278  
they called me almost immediately and

517  
00:20:50,690 --> 00:20:53,419  
they've been super gracious the whole

518  
00:20:52,278 --> 00:20:55,608  
time I've been dealing with them that's

519  
00:20:53,419 --> 00:20:56,989  
what it does show something about the

520  
00:20:55,608 --> 00:20:59,148  
power of the social networks and we're

521  
00:20:56,989 --> 00:21:00,679  
also seeing inception movie absolutely

522  
00:20:59,148 --> 00:21:03,048  
that's how the message gets out and

523  
00:21:00,679 --> 00:21:04,700  
bringing in younger people into the pole

524  
00:21:03,048 --> 00:21:06,259  
because it's so easy to not to make the

525  
00:21:04,700 --> 00:21:10,759  
contact and to be become part of

526  
00:21:06,259 --> 00:21:12,710  
something so that's we are right now my

527  
00:21:10,759 --> 00:21:13,759  
children asked asked me to ask a couple

528  
00:21:12,710 --> 00:21:15,739  
of questions they're actually good

529  
00:21:13,759 --> 00:21:17,870  
question so I'm happy to to quote them

530  
00:21:15,739 --> 00:21:21,329  
what's the weirdest job you've ever had

531  
00:21:17,869 --> 00:21:22,799  
mmm I've had a lot of weird jobs I've

532  
00:21:21,329 --> 00:21:25,470  
seemed to have ended up spending in an

533  
00:21:22,799 --> 00:21:28,009  
ordinate of time in my early 20s working

534  
00:21:25,470 --> 00:21:31,440  
or working with and around drag queens

535  
00:21:28,009 --> 00:21:32,819  
no I was worked for a year as a

536  
00:21:31,440 --> 00:21:34,320  
projectionist at the eighth street

537  
00:21:32,819 --> 00:21:38,369  
playhouse in New York where the rocky

538  
00:21:34,319 --> 00:21:40,679  
horror picture show fad began I spent

539  
00:21:38,369 --> 00:21:42,239  
six months running lights for a drag

540  
00:21:40,680 --> 00:21:44,120  
queen version of whatever happened to

541  
00:21:42,240 --> 00:21:46,950  
Baby Jane in San Francisco which was a

542

00:21:44,119 --> 00:21:49,139  
legendary production that was just sick

543  
00:21:46,950 --> 00:21:50,670  
and wrong and beautiful and amazing and

544  
00:21:49,140 --> 00:21:54,890  
I spent two and a half years working for

545  
00:21:50,670 --> 00:21:57,450  
a really renowned drag to that all drag

546  
00:21:54,890 --> 00:21:59,820  
turn camp comedy revue in San Francisco

547  
00:21:57,450 --> 00:22:01,289  
called beach blanket babylon and those

548  
00:21:59,819 --> 00:22:03,629  
three absolutely take the cake yeah

549  
00:22:01,289 --> 00:22:06,119  
sounds like they do and the last

550  
00:22:03,630 --> 00:22:09,570  
question is do you ever feel sorry for

551  
00:22:06,119 --> 00:22:11,129  
buster no actually Buster a terrific

552  
00:22:09,569 --> 00:22:12,990  
release for any aggression that I might

553  
00:22:11,130 --> 00:22:14,370  
have on any given day and throwing him

554  
00:22:12,990 --> 00:22:16,109  
face-first out of the back of the truck

555  
00:22:14,369 --> 00:22:18,539  
is just as satisfying as you imagine

556  
00:22:16,109 --> 00:22:19,829

that it is okay thank you very much I

557

00:22:18,539 --> 00:22:22,139

don't think I'll be on the Skip exam

558

00:22:19,829 --> 00:22:24,199

thank you

559

00:22:22,140 --> 00:22:24,200

you

560

00:22:26,990 --> 00:22:33,799

and now a message from the inside of

561

00:22:29,670 --> 00:22:33,800

Richard Saunders walk-in refrigerator

562

00:22:35,180 --> 00:22:40,560

thank you to everybody who came up to

563

00:22:37,890 --> 00:22:42,180

see me at the amazing meeting and thank

564

00:22:40,559 --> 00:22:44,720

you for those who bought my origami

565

00:22:42,180 --> 00:22:51,299

earrings I've set up a little store at

566

00:22:44,720 --> 00:22:54,950

skeptic zone ETS y dot com it all goes

567

00:22:51,299 --> 00:22:54,950

to helping the skeptics own podcast

568

00:22:55,430 --> 00:23:08,460

you're listening to the skeptic zone I'm

569

00:22:58,470 --> 00:23:10,650

Brian Dunning from SCAP thaicom I'm

570

00:23:08,460 --> 00:23:12,630

Carly Sturgis and I'm certain that we

571  
00:23:10,650 --> 00:23:14,519  
all wonder if science education is

572  
00:23:12,630 --> 00:23:16,950  
really something that only happens in

573  
00:23:14,519 --> 00:23:19,769  
schools our do children best learn

574  
00:23:16,950 --> 00:23:21,509  
science what is learning anyway and what

575  
00:23:19,769 --> 00:23:24,569  
will happen to Australia when we get a

576  
00:23:21,509 --> 00:23:27,000  
national curriculum today's interview is

577  
00:23:24,569 --> 00:23:28,319  
with Professor Leone Rennie she is

578  
00:23:27,000 --> 00:23:30,539  
professor of Science and Technology

579  
00:23:28,319 --> 00:23:32,759  
studies is the former dean of graduate

580  
00:23:30,539 --> 00:23:34,589  
studies and currently a research

581  
00:23:32,759 --> 00:23:36,839  
professor at the Department of research

582  
00:23:34,589 --> 00:23:40,109  
and development at the Curtin University

583  
00:23:36,839 --> 00:23:41,399  
of Technology in Western Australia she

584  
00:23:40,109 --> 00:23:42,959  
has written extensively on the

585  
00:23:41,400 --> 00:23:44,970  
community's contribution to science

586  
00:23:42,960 --> 00:23:47,640  
learning and the impact of the public

587  
00:23:44,970 --> 00:23:50,309  
understanding of science professor any

588  
00:23:47,640 --> 00:23:52,020  
also contributed as a co-author to the

589  
00:23:50,309 --> 00:23:55,829  
Australian school science education

590  
00:23:52,019 --> 00:23:57,720  
national action plan for 2008 to 2012

591  
00:23:55,829 --> 00:24:00,089  
with the aim of achieving agreement

592  
00:23:57,720 --> 00:24:01,740  
about priority actions to be pursued

593  
00:24:00,089 --> 00:24:04,199  
through national collaborative efforts

594  
00:24:01,740 --> 00:24:05,640  
professor Annie's work on the learning

595  
00:24:04,200 --> 00:24:08,400  
of science in formal and informal

596  
00:24:05,640 --> 00:24:10,470  
contexts has greatly informed science

597  
00:24:08,400 --> 00:24:12,870  
communication which is why are we

598  
00:24:10,470 --> 00:24:16,670  
starting my interview by asking what is

599

00:24:12,869 --> 00:24:16,669  
science communication anyway

600  
00:24:22,970 --> 00:24:27,539  
I'm here at Curtin University with

601  
00:24:25,680 --> 00:24:31,440  
Professor Leone ready and it's lovely to

602  
00:24:27,539 --> 00:24:33,450  
meet you Leone hello Carly ok what is

603  
00:24:31,440 --> 00:24:36,090  
science communication I am talking to

604  
00:24:33,450 --> 00:24:37,680  
someone who is a major force for science

605  
00:24:36,089 --> 00:24:40,439  
communication in Australia what on earth

606  
00:24:37,680 --> 00:24:43,620  
does that mean I'm in science

607  
00:24:40,440 --> 00:24:47,009  
communication I science communication is

608  
00:24:43,619 --> 00:24:48,209  
generally held to be the communication

609  
00:24:47,009 --> 00:24:51,450  
of science to people who aren't

610  
00:24:48,210 --> 00:24:52,799  
scientists and usually adults because if

611  
00:24:51,450 --> 00:24:55,920  
they're in school then it's called

612  
00:24:52,799 --> 00:24:59,399  
science education probably so science

613  
00:24:55,920 --> 00:25:01,440

communication is a I think we could

614

00:24:59,400 --> 00:25:07,230  
probably say it's almost its own

615

00:25:01,440 --> 00:25:09,230  
discipline now and it relates to the it

616

00:25:07,230 --> 00:25:12,089  
really has to be a way of changing

617

00:25:09,230 --> 00:25:15,120  
science as the scientists see it into a

618

00:25:12,089 --> 00:25:19,139  
form that is understandable to the

619

00:25:15,119 --> 00:25:22,349  
general public and in the past the

620

00:25:19,140 --> 00:25:24,650  
unfortunate acronym of paths which stood

621

00:25:22,349 --> 00:25:27,359  
for public understanding of science

622

00:25:24,650 --> 00:25:32,280  
which came to the fore in probably the

623

00:25:27,359 --> 00:25:35,279  
1980s was it has been slated as being a

624

00:25:32,279 --> 00:25:36,839  
somewhat deficit approach in the idea

625

00:25:35,279 --> 00:25:38,339  
that the public are pretty dumb they

626

00:25:36,839 --> 00:25:40,589  
don't know much so if we give them lots

627

00:25:38,339 --> 00:25:42,720  
of science stuff then they'll become and

628  
00:25:40,589 --> 00:25:44,609  
scientifically literate or whatever and

629  
00:25:42,720 --> 00:25:46,980  
we're communicating our science so this

630  
00:25:44,609 --> 00:25:51,089  
kind of top-down approach is pretty well

631  
00:25:46,980 --> 00:25:53,490  
at the window now I think I think it's

632  
00:25:51,089 --> 00:25:59,329  
fair to say that a significant change

633  
00:25:53,490 --> 00:26:02,279  
was facilitated by the BSC the bovine

634  
00:25:59,329 --> 00:26:04,799  
and civilized year that's the ones under

635  
00:26:02,279 --> 00:26:07,379  
whatever lungi from where the brain gets

636  
00:26:04,799 --> 00:26:11,490  
a dreadful disease exactly the mad cow

637  
00:26:07,380 --> 00:26:13,050  
disease was so badly handled in England

638  
00:26:11,490 --> 00:26:15,599  
in terms of communicating information

639  
00:26:13,049 --> 00:26:16,418  
out to the public that there is movement

640  
00:26:15,599 --> 00:26:18,248  
amongst

641  
00:26:16,419 --> 00:26:21,070  
Parliament and so on a lot of surveys

642  
00:26:18,249 --> 00:26:24,669  
and so on parliamentary statements in

643  
00:26:21,069 --> 00:26:27,428  
England and it does now recognition that

644  
00:26:24,669 --> 00:26:29,320  
it's not so much telling the public but

645  
00:26:27,429 --> 00:26:32,109  
it's actually engaging the public in

646  
00:26:29,319 --> 00:26:35,548  
more of a two-way dialogue between the

647  
00:26:32,108 --> 00:26:37,480  
scientists in between the public

648  
00:26:35,548 --> 00:26:39,278  
recognizing that the public is not a

649  
00:26:37,480 --> 00:26:41,139  
homogeneous body but he peaked very

650  
00:26:39,278 --> 00:26:43,028  
heterogeneous body with people with

651  
00:26:41,138 --> 00:26:46,209  
varying interests and understandings

652  
00:26:43,028 --> 00:26:48,940  
about science so that's rather long

653  
00:26:46,210 --> 00:26:50,499  
explanation I think and it's become a

654  
00:26:48,940 --> 00:26:52,600  
discipline as something that people

655  
00:26:50,499 --> 00:26:54,940  
study at university in fact there are

656

00:26:52,599 --> 00:26:56,918  
very large number of science

657  
00:26:54,940 --> 00:26:59,288  
communication courses quite a few in

658  
00:26:56,919 --> 00:27:03,340  
Australia there's a new one to starting

659  
00:26:59,288 --> 00:27:05,408  
up at UWA I think there's probably than

660  
00:27:03,339 --> 00:27:09,308  
one the most prestigious one is the one

661  
00:27:05,409 --> 00:27:11,080  
at the anu and australian national

662  
00:27:09,308 --> 00:27:13,658  
university which comes out of the scent

663  
00:27:11,079 --> 00:27:15,970  
of public awareness of science and the

664  
00:27:13,659 --> 00:27:18,220  
director of that center so stock or maya

665  
00:27:15,970 --> 00:27:20,829  
would in my view be one of the leading

666  
00:27:18,220 --> 00:27:22,899  
science communicators in australia so

667  
00:27:20,829 --> 00:27:25,599  
does one have to have a degree in

668  
00:27:22,898 --> 00:27:27,638  
science communication to become a

669  
00:27:25,599 --> 00:27:30,939  
science communicator is it that sort of

670  
00:27:27,638 --> 00:27:33,428

strict in terms of defining it no i

671  
00:27:30,940 --> 00:27:35,379  
would not think so i think that people

672  
00:27:33,429 --> 00:27:36,909  
who can communicate science don't

673  
00:27:35,378 --> 00:27:38,589  
necessarily call themselves science

674  
00:27:36,909 --> 00:27:40,299  
communicators they just passionate about

675  
00:27:38,589 --> 00:27:42,970  
their subject and they can communicate

676  
00:27:40,298 --> 00:27:45,460  
it there are a lot of scientists who are

677  
00:27:42,970 --> 00:27:47,319  
not good science communicators because

678  
00:27:45,460 --> 00:27:49,058  
they somehow aren't able to make what it

679  
00:27:47,319 --> 00:27:51,700  
is they're saying intelligible and

680  
00:27:49,058 --> 00:27:54,700  
understanding to the to the public to

681  
00:27:51,700 --> 00:27:56,558  
whom they're speaking and Sue stockmeyer

682  
00:27:54,700 --> 00:27:58,659  
and her colleagues might go in

683  
00:27:56,558 --> 00:28:00,819  
particular who you may recall was the

684  
00:27:58,659 --> 00:28:02,409  
founder of Questacon Australia's

685  
00:28:00,819 --> 00:28:05,200  
national science and technology center

686  
00:28:02,409 --> 00:28:07,470  
do a lot of work both in Australia and

687  
00:28:05,200 --> 00:28:07,470  
internationally

688  
00:28:07,710 --> 00:28:13,029  
promulgating ways for scientists to

689  
00:28:10,779 --> 00:28:15,519  
learn to communicate better and they see

690  
00:28:13,029 --> 00:28:17,680  
that they being assigned to see that is

691  
00:28:15,519 --> 00:28:19,000  
beneficial because if people I can't

692  
00:28:17,680 --> 00:28:20,470  
understand what they're doing they feel

693  
00:28:19,000 --> 00:28:23,140  
as if they're more likely to get public

694  
00:28:20,470 --> 00:28:24,730  
support for what it is they're doing so

695  
00:28:23,140 --> 00:28:26,740  
what are the keys to communicating

696  
00:28:24,730 --> 00:28:29,410  
science well what are some of the big

697  
00:28:26,740 --> 00:28:33,160  
lessons that these people learn I think

698  
00:28:29,410 --> 00:28:36,279  
it's recognition of where the audience

699  
00:28:33,160 --> 00:28:40,810  
to whom you wish to communicate where

700  
00:28:36,279 --> 00:28:42,849  
they're at and then preparing or

701  
00:28:40,809 --> 00:28:46,450  
changing what it is you've prepared in

702  
00:28:42,849 --> 00:28:48,699  
fact so that it's understandable by that

703  
00:28:46,450 --> 00:28:50,529  
particular audience and I thoroughness

704  
00:28:48,700 --> 00:28:52,420  
essence of any sort of communication

705  
00:28:50,529 --> 00:28:53,769  
science communication is just something

706  
00:28:52,420 --> 00:28:58,060  
to do with the content that you're

707  
00:28:53,769 --> 00:28:59,769  
trying to communicate so learning is one

708  
00:28:58,059 --> 00:29:01,470  
of the big factors within it how do we

709  
00:28:59,769 --> 00:29:05,379  
learn what sort of things do we know

710  
00:29:01,470 --> 00:29:06,940  
influence us learning well and among I

711  
00:29:05,380 --> 00:29:10,750  
imagine science communicators must want

712  
00:29:06,940 --> 00:29:13,090  
to tap into that yes learnings not easy

713

00:29:10,750 --> 00:29:15,609  
to define no I've noticed that as an

714  
00:29:13,089 --> 00:29:17,259  
educator myself or ten years I get a

715  
00:29:15,609 --> 00:29:19,000  
different PD all the time about all this

716  
00:29:17,259 --> 00:29:21,190  
is going to be the way to do it and is

717  
00:29:19,000 --> 00:29:23,799  
like next week Abby oh come up with

718  
00:29:21,190 --> 00:29:26,529  
something new so what do we know well i

719  
00:29:23,799 --> 00:29:28,869  
think that the bottom line is that

720  
00:29:26,529 --> 00:29:30,789  
people learn differently yeah and i like

721  
00:29:28,869 --> 00:29:33,129  
looking at graphs some tables and

722  
00:29:30,789 --> 00:29:35,230  
mathematical representations of what it

723  
00:29:33,130 --> 00:29:39,130  
is on learning other people like two

724  
00:29:35,230 --> 00:29:43,059  
pictures of people like to just read

725  
00:29:39,130 --> 00:29:44,890  
words so that's and some people like to

726  
00:29:43,059 --> 00:29:46,960  
hear things some people like to see

727  
00:29:44,890 --> 00:29:49,380

things so there's a whole way of taking

728

00:29:46,960 --> 00:29:53,829

in the information that one has to learn

729

00:29:49,380 --> 00:29:56,080

I think the three important things about

730

00:29:53,829 --> 00:29:58,779

learning personally is that it's a it's

731

00:29:56,079 --> 00:30:02,079

a unique personal process

732

00:29:58,779 --> 00:30:03,700

that is cumulative so what anything that

733

00:30:02,079 --> 00:30:05,409

you anything you learned that two new

734

00:30:03,700 --> 00:30:07,900

will usually build from what you already

735

00:30:05,410 --> 00:30:10,090

know and it could change it or just add

736

00:30:07,900 --> 00:30:13,630

to it and the third thing is that

737

00:30:10,089 --> 00:30:18,429

learning takes time and so one of the

738

00:30:13,630 --> 00:30:20,410

criticisms of people saying that science

739

00:30:18,430 --> 00:30:22,360

centers for example in museums or places

740

00:30:20,410 --> 00:30:24,070

of learning is that well you know how

741

00:30:22,359 --> 00:30:26,799

can I learn anything only there for an

742  
00:30:24,069 --> 00:30:29,529  
hour or two hours and the thing is that

743  
00:30:26,799 --> 00:30:33,909  
in that hour or two hour they could have

744  
00:30:29,529 --> 00:30:36,430  
a an enlightened moment where they see

745  
00:30:33,910 --> 00:30:38,920  
something that fits into other stuff

746  
00:30:36,430 --> 00:30:41,110  
that they knew before or somewhere down

747  
00:30:38,920 --> 00:30:43,509  
the track they can have an experience

748  
00:30:41,109 --> 00:30:45,549  
that harks back to what they did this

749  
00:30:43,509 --> 00:30:49,000  
and experience in a science center or a

750  
00:30:45,549 --> 00:30:51,789  
museum and say oh yeah now I get it sort

751  
00:30:49,000 --> 00:30:54,039  
of their their personal epiphany if you

752  
00:30:51,789 --> 00:30:56,079  
like that whatever it is that they've

753  
00:30:54,039 --> 00:30:58,149  
just learned this is in fact something

754  
00:30:56,079 --> 00:30:59,949  
that you've done research on and written

755  
00:30:58,150 --> 00:31:03,630  
about the importance of science museums

756  
00:30:59,950 --> 00:31:09,460  
and I have yes I've done a fair bit in

757  
00:31:03,630 --> 00:31:11,710  
that area and I think that science

758  
00:31:09,460 --> 00:31:15,160  
museums and and museums and a whole

759  
00:31:11,710 --> 00:31:17,230  
range of out of school experiences have

760  
00:31:15,160 --> 00:31:19,269  
got the potential to teach people a lot

761  
00:31:17,230 --> 00:31:21,519  
about science and in fact when you think

762  
00:31:19,269 --> 00:31:22,990  
that even for a schoolchild the

763  
00:31:21,519 --> 00:31:27,339  
percentage of time that they actually

764  
00:31:22,990 --> 00:31:29,980  
spend in school is much less than half

765  
00:31:27,339 --> 00:31:33,819  
of that lifetime even if you take out

766  
00:31:29,980 --> 00:31:35,170  
the sleeping hours and of all that time

767  
00:31:33,819 --> 00:31:36,609  
they spend in school only a small

768  
00:31:35,170 --> 00:31:38,769  
portion of its going to be devoted to

769  
00:31:36,609 --> 00:31:40,359  
science so a lot of science learning is

770

00:31:38,769 --> 00:31:42,519  
going to be happening outside of school

771  
00:31:40,359 --> 00:31:44,919  
anyway even for school children and

772  
00:31:42,519 --> 00:31:46,210  
teachers need to be aware of what kids

773  
00:31:44,920 --> 00:31:48,430  
are coming in with what knowledge

774  
00:31:46,210 --> 00:31:51,789  
they've got which can be wrong and can

775  
00:31:48,430 --> 00:31:55,720  
be right can be your formed can be very

776  
00:31:51,789 --> 00:31:57,039  
resistant to change teachers have to

777  
00:31:55,720 --> 00:32:00,690  
work with that

778  
00:31:57,039 --> 00:32:03,099  
and help students to move into a more

779  
00:32:00,690 --> 00:32:05,470  
scientifically acceptable I am thinking

780  
00:32:03,099 --> 00:32:06,699  
I think if they want to progress in and

781  
00:32:05,470 --> 00:32:09,549  
learn the sort of science that

782  
00:32:06,700 --> 00:32:12,039  
scientists deal with there's a variety

783  
00:32:09,549 --> 00:32:14,109  
of other programs to we mums and science

784  
00:32:12,039 --> 00:32:17,019

and scientists and schools as well i

785

00:32:14,109 --> 00:32:19,629

believe is because their science to the

786

00:32:17,019 --> 00:32:21,369

classroom yes scientists in schools an

787

00:32:19,630 --> 00:32:23,770

interesting program but you mentioned

788

00:32:21,369 --> 00:32:25,779

mums in science first I think the anu

789

00:32:23,769 --> 00:32:27,160

through see past the center public

790

00:32:25,779 --> 00:32:28,990

awareness of science had a very

791

00:32:27,160 --> 00:32:31,450

successful program last year which i

792

00:32:28,990 --> 00:32:33,880

think the main benefit was learning mums

793

00:32:31,450 --> 00:32:35,230

come and actually do stuff and giving

794

00:32:33,880 --> 00:32:37,600

them the confidence that they could

795

00:32:35,230 --> 00:32:38,829

actually know and understand and do this

796

00:32:37,599 --> 00:32:40,779

and so they could talk to their kids

797

00:32:38,829 --> 00:32:43,629

about the science they did at school so

798

00:32:40,779 --> 00:32:46,000

i think that the empower empowering

799  
00:32:43,630 --> 00:32:48,490  
aspect of the mums in science was just

800  
00:32:46,000 --> 00:32:49,779  
giving them the confidence and there's

801  
00:32:48,490 --> 00:32:52,450  
no reason why it can be danced in

802  
00:32:49,779 --> 00:32:55,149  
science too it's just that the hours the

803  
00:32:52,450 --> 00:32:56,799  
hours sort of suited the month it could

804  
00:32:55,150 --> 00:32:58,300  
come with their little really little

805  
00:32:56,799 --> 00:33:00,609  
kids and so on and then talk to them

806  
00:32:58,299 --> 00:33:03,099  
their children from school scientists in

807  
00:33:00,609 --> 00:33:04,719  
schools you know there's a lot of

808  
00:33:03,099 --> 00:33:06,549  
scientists in schools program around the

809  
00:33:04,720 --> 00:33:08,769  
world they're not all called that but

810  
00:33:06,549 --> 00:33:11,409  
the one in australia has been funded by

811  
00:33:08,769 --> 00:33:14,819  
the Department of Education Employment

812  
00:33:11,410 --> 00:33:18,790  
or workplace relations and is run by the

813  
00:33:14,819 --> 00:33:22,029  
CSIRO the education branch and at the

814  
00:33:18,789 --> 00:33:24,609  
moment they've got something like 1300

815  
00:33:22,029 --> 00:33:27,190  
partnerships working in schools across

816  
00:33:24,609 --> 00:33:30,699  
Australia involving something in the

817  
00:33:27,190 --> 00:33:32,380  
order of 850 schools some of them are

818  
00:33:30,700 --> 00:33:34,750  
primary some of them are secondary and

819  
00:33:32,380 --> 00:33:37,210  
the way that partnerships between

820  
00:33:34,750 --> 00:33:41,559  
scientists and teachers work varies

821  
00:33:37,210 --> 00:33:43,660  
enormously and really enormously some of

822  
00:33:41,559 --> 00:33:45,519  
the really successful ones have been

823  
00:33:43,660 --> 00:33:48,100  
where scientists have come in schools

824  
00:33:45,519 --> 00:33:51,849  
worked with the teacher to prepare a

825  
00:33:48,099 --> 00:33:53,349  
program and scientists could lead the

826  
00:33:51,849 --> 00:33:56,349  
program or the teacher can lead the

827

00:33:53,349 --> 00:34:02,139  
program with a scientist backing up as

828  
00:33:56,349 --> 00:34:04,599  
it were and it's in those programs some

829  
00:34:02,140 --> 00:34:07,690  
of the outcomes are just very exciting

830  
00:34:04,599 --> 00:34:08,769  
the caskets so enthusiastic I was

831  
00:34:07,690 --> 00:34:11,260  
visiting a school

832  
00:34:08,769 --> 00:34:13,030  
in Perth last year in fact and the

833  
00:34:11,260 --> 00:34:15,940  
scientists had come into a year one

834  
00:34:13,030 --> 00:34:18,340  
class well he was a soil scientist and

835  
00:34:15,940 --> 00:34:20,590  
he'd taken the kids over into the senior

836  
00:34:18,340 --> 00:34:23,050  
school to the science labs and they were

837  
00:34:20,590 --> 00:34:24,760  
using microscopes and so the kids are a

838  
00:34:23,050 --> 00:34:26,710  
few parents helping all these little one

839  
00:34:24,760 --> 00:34:28,390  
kids were looking at onion skin under

840  
00:34:26,710 --> 00:34:31,918  
the microscope and then they got some

841  
00:34:28,389 --> 00:34:36,398

euglena UK nurse little tiny single-cell

842

00:34:31,918 --> 00:34:38,379

green animals in ponds and I was just

843

00:34:36,398 --> 00:34:40,779

sitting there taking my field notes and

844

00:34:38,380 --> 00:34:42,880

all of a sudden a little boy jumped up

845

00:34:40,780 --> 00:34:46,120

and he ran around the room shouting I

846

00:34:42,880 --> 00:34:48,159

saw one swimming I said I'm sorry it was

847

00:34:46,119 --> 00:34:49,898

just so amazing that because these

848

00:34:48,159 --> 00:34:52,599

little you Glenn you can see them moving

849

00:34:49,898 --> 00:34:54,809

around under the microscope so I think

850

00:34:52,599 --> 00:34:58,299

you know whether this long-term learning

851

00:34:54,809 --> 00:35:00,369

is one thing but and I think the main

852

00:34:58,300 --> 00:35:02,140

thing is that the enthusiasm there are

853

00:35:00,369 --> 00:35:04,179

two things the enthusiasm the kids get

854

00:35:02,139 --> 00:35:05,980

out of it but also the enthusiasm the

855

00:35:04,179 --> 00:35:07,719

scientists to get out of it a lot of

856  
00:35:05,980 --> 00:35:11,590  
them have said well that's kind of

857  
00:35:07,719 --> 00:35:14,529  
renewed my passion you know and we've

858  
00:35:11,590 --> 00:35:17,400  
demonstrated my colleague Christine haut

859  
00:35:14,530 --> 00:35:20,530  
and I have been evaluating their program

860  
00:35:17,400 --> 00:35:22,539  
have demonstrated quite conclusively

861  
00:35:20,530 --> 00:35:24,460  
that there's are not an enormous boost

862  
00:35:22,539 --> 00:35:28,539  
in confidence in teaching science for

863  
00:35:24,460 --> 00:35:30,190  
primary teachers who are typically have

864  
00:35:28,539 --> 00:35:32,259  
not had much science in their own

865  
00:35:30,190 --> 00:35:35,740  
education and feel quite unconfident

866  
00:35:32,260 --> 00:35:38,200  
about teaching science at school so I

867  
00:35:35,739 --> 00:35:39,609  
think part of it is not just learning

868  
00:35:38,199 --> 00:35:42,730  
whatever it is that the scientists

869  
00:35:39,610 --> 00:35:45,670  
happens to be an expert in but having

870  
00:35:42,730 --> 00:35:47,889  
the confidence to realize that you don't

871  
00:35:45,670 --> 00:35:50,680  
have to know anything but if you can get

872  
00:35:47,889 --> 00:35:53,409  
the kids to ask their own questions and

873  
00:35:50,679 --> 00:35:55,750  
investigate them that the teachers can

874  
00:35:53,409 --> 00:35:57,940  
be learning along with the kids and the

875  
00:35:55,750 --> 00:36:00,369  
scientists there to provide that expert

876  
00:35:57,940 --> 00:36:02,409  
advice you'll be that kind of support if

877  
00:36:00,369 --> 00:36:04,480  
you like with the teachers so it's been

878  
00:36:02,409 --> 00:36:05,739  
a very successful program is still

879  
00:36:04,480 --> 00:36:08,409  
continuing on right

880  
00:36:05,739 --> 00:36:10,089  
still going on you're involved with the

881  
00:36:08,409 --> 00:36:12,159  
National Action Plan for Australian

882  
00:36:10,090 --> 00:36:13,600  
schools science education what's going

883  
00:36:12,159 --> 00:36:16,719  
to be happening to Australia in the

884

00:36:13,599 --> 00:36:18,880  
future good point my colleague Dennis

885  
00:36:16,719 --> 00:36:21,539  
goodrem who was in at the University of

886  
00:36:18,880 --> 00:36:26,349  
Canberra and I prepared that report in

887  
00:36:21,539 --> 00:36:28,059  
2007 government what we were trying to

888  
00:36:26,349 --> 00:36:30,940  
look at future direction to science

889  
00:36:28,059 --> 00:36:33,190  
education in Australia Australia like

890  
00:36:30,940 --> 00:36:36,579  
most Western countries is suffering from

891  
00:36:33,190 --> 00:36:39,329  
an insufficient workforce in science

892  
00:36:36,579 --> 00:36:41,799  
engineering technology related careers

893  
00:36:39,329 --> 00:36:44,409  
there's particularly at the lower

894  
00:36:41,800 --> 00:36:46,930  
secondary level are high level of

895  
00:36:44,409 --> 00:36:49,839  
disengagement among students in science

896  
00:36:46,929 --> 00:36:53,618  
at school and why is that what's turning

897  
00:36:49,840 --> 00:36:55,780  
kids off well I don't think it would be

898  
00:36:53,619 --> 00:36:57,369

much of a stretch to say that much of

899

00:36:55,780 --> 00:36:59,170

the science that they learn at that

900

00:36:57,369 --> 00:37:01,900

level is actually quite boring and

901

00:36:59,170 --> 00:37:03,340

irrelevant in their eyes and it doesn't

902

00:37:01,900 --> 00:37:06,130

seem to relate much to what they do

903

00:37:03,340 --> 00:37:07,420

outside of school now I have to

904

00:37:06,130 --> 00:37:09,910

categorize this and say this is not

905

00:37:07,420 --> 00:37:12,400

every classroom no but generally

906

00:37:09,909 --> 00:37:15,279

accepted across and it'll be a lot of

907

00:37:12,400 --> 00:37:17,710

reports in Europe the US about this is

908

00:37:15,280 --> 00:37:20,500

that it's in the science of the

909

00:37:17,710 --> 00:37:22,990

beginning school is seem to be based on

910

00:37:20,500 --> 00:37:25,000

the science disciplines the concepts

911

00:37:22,989 --> 00:37:27,399

which actually very difficult to apply

912

00:37:25,000 --> 00:37:28,960

and out of school situations and there

913  
00:37:27,400 --> 00:37:31,450  
are a number of reasons for that not the

914  
00:37:28,960 --> 00:37:32,820  
least of which that science outside of

915  
00:37:31,449 --> 00:37:34,618  
school is actually quite

916  
00:37:32,820 --> 00:37:37,330  
interdisciplinary or multidisciplinary

917  
00:37:34,619 --> 00:37:40,240  
there isn't just one explanation for

918  
00:37:37,329 --> 00:37:42,429  
things like global warming or salinity

919  
00:37:40,239 --> 00:37:44,199  
or whatever whereas the sites they learn

920  
00:37:42,429 --> 00:37:47,349  
at school tends to be physics or

921  
00:37:44,199 --> 00:37:49,868  
chemistry or biology and it's very hard

922  
00:37:47,349 --> 00:37:52,839  
to remove you just take Newton's second

923  
00:37:49,869 --> 00:37:54,400  
law ref echoes na it's very helpful for

924  
00:37:52,840 --> 00:37:56,140  
solving problems in your physics

925  
00:37:54,400 --> 00:37:58,900  
textbook but it's actually not terribly

926  
00:37:56,139 --> 00:38:01,659  
useful to figuring out what happens

927  
00:37:58,900 --> 00:38:04,450  
outside when you're driving a car and I

928  
00:38:01,659 --> 00:38:07,000  
always think of a year eight student I

929  
00:38:04,449 --> 00:38:09,129  
met many years ago when ice collecting

930  
00:38:07,000 --> 00:38:12,159  
some data at a school and

931  
00:38:09,130 --> 00:38:13,838  
he asked you know why don't we do more

932  
00:38:12,159 --> 00:38:15,098  
interesting science at school I said

933  
00:38:13,838 --> 00:38:16,568  
what do you want to do when you grow up

934  
00:38:15,099 --> 00:38:19,390  
and he said he wanted to be a racing car

935  
00:38:16,568 --> 00:38:21,159  
driver I said what's the science topic

936  
00:38:19,389 --> 00:38:23,588  
you doing at the moment you said forces

937  
00:38:21,159 --> 00:38:26,710  
an energy I think would sing i lecture

938  
00:38:23,588 --> 00:38:28,690  
can no connection between the two so

939  
00:38:26,710 --> 00:38:31,480  
there's got to be a way of linking what

940  
00:38:28,690 --> 00:38:33,250  
science out there in the real world with

941

00:38:31,480 --> 00:38:35,619  
science that happens in school and so

942  
00:38:33,250 --> 00:38:37,358  
I'm a big advocate of more community

943  
00:38:35,619 --> 00:38:39,068  
involvement in science which is why I'm

944  
00:38:37,358 --> 00:38:41,889  
a supporter of the scientist in Schools

945  
00:38:39,068 --> 00:38:44,710  
program because it seems to be having

946  
00:38:41,889 --> 00:38:46,750  
those kinds of positive effects what do

947  
00:38:44,710 --> 00:38:49,269  
you think might happen to Australia's

948  
00:38:46,750 --> 00:38:51,909  
science education program we have the

949  
00:38:49,268 --> 00:38:59,169  
national curriculum yes doorstep for

950  
00:38:51,909 --> 00:39:02,679  
exam yesterday in which you mentioned

951  
00:38:59,170 --> 00:39:04,568  
earlier one off when we looked at things

952  
00:39:02,679 --> 00:39:06,308  
concerning students and the science

953  
00:39:04,568 --> 00:39:08,170  
curriculum things concerning teachers

954  
00:39:06,309 --> 00:39:10,630  
teacher education suppliant amount of

955  
00:39:08,170 --> 00:39:13,349

teaching of teachers and we also looked

956

00:39:10,630 --> 00:39:16,329

at the systems of you know the

957

00:39:13,349 --> 00:39:19,000

jurisdictions the state systems the you

958

00:39:16,329 --> 00:39:22,059

know government religious independent

959

00:39:19,000 --> 00:39:24,750

school systems and the community as a

960

00:39:22,059 --> 00:39:30,640

whole and how they could better interact

961

00:39:24,750 --> 00:39:33,369

one of the things that we felt was not

962

00:39:30,639 --> 00:39:35,159

especially useful was the fact that

963

00:39:33,369 --> 00:39:38,920

every state and territory has its own

964

00:39:35,159 --> 00:39:41,259

education system and they have their own

965

00:39:38,920 --> 00:39:43,119

curriculum although there's a great deal

966

00:39:41,259 --> 00:39:46,449

of commonality if you look between them

967

00:39:43,119 --> 00:39:48,759

and it just didn't seem that everyone

968

00:39:46,449 --> 00:39:51,689

should be reinventing inventing their

969

00:39:48,759 --> 00:39:53,798

own we land and so on and so we had

970  
00:39:51,690 --> 00:39:55,900  
suggested that a more national approach

971  
00:39:53,798 --> 00:39:58,179  
to curriculum was appropriate and with

972  
00:39:55,900 --> 00:39:59,920  
Dennis and another colleague mark

973  
00:39:58,179 --> 00:40:01,929  
heckling and I had in an earlier report

974  
00:39:59,920 --> 00:40:03,309  
called the status of quality of teaching

975  
00:40:01,929 --> 00:40:05,768  
and learning science in Australian

976  
00:40:03,309 --> 00:40:06,920  
schools which was published in 2001 had

977  
00:40:05,768 --> 00:40:10,098  
said virtually

978  
00:40:06,920 --> 00:40:11,809  
thing and so now that we are having a

979  
00:40:10,099 --> 00:40:13,730  
national curriculum in a number of

980  
00:40:11,809 --> 00:40:19,099  
subjects and Sciences one of the first

981  
00:40:13,730 --> 00:40:20,420  
ones off the rank as it were the there

982  
00:40:19,099 --> 00:40:23,960  
was an extensive period of consultation

983  
00:40:20,420 --> 00:40:28,180  
and then writing began earlier this year

984  
00:40:23,960 --> 00:40:31,220  
and there will be my understanding is a

985  
00:40:28,179 --> 00:40:33,980  
round of communication with stakeholders

986  
00:40:31,219 --> 00:40:36,019  
during August of some preliminary

987  
00:40:33,980 --> 00:40:40,159  
documentation sort of scope and sequence

988  
00:40:36,019 --> 00:40:43,519  
kind of information whether or not it's

989  
00:40:40,159 --> 00:40:46,509  
accepted across all of the states will

990  
00:40:43,519 --> 00:40:48,739  
be a political decision not a decision

991  
00:40:46,510 --> 00:40:51,920  
related specifically to science

992  
00:40:48,739 --> 00:40:54,588  
education I think so the writing team

993  
00:40:51,920 --> 00:40:56,510  
and the Advisory Committee for not just

994  
00:40:54,588 --> 00:40:58,130  
sighs but for all of the subjects that

995  
00:40:56,510 --> 00:40:59,960  
are currently being prepared have

996  
00:40:58,130 --> 00:41:02,809  
representatives from each state and

997  
00:40:59,960 --> 00:41:04,519  
territory that way I guess there's a bit

998

00:41:02,809 --> 00:41:06,079  
of ownership because people come from

999  
00:41:04,519 --> 00:41:07,548  
their own systems knowing what their own

1000  
00:41:06,079 --> 00:41:09,440  
curriculum is like so it'll be

1001  
00:41:07,548 --> 00:41:11,838  
interesting to see what the uptake is

1002  
00:41:09,440 --> 00:41:14,869  
there will certainly be lots of public

1003  
00:41:11,838 --> 00:41:16,190  
consultation the the August my

1004  
00:41:14,869 --> 00:41:18,260  
understanding is that the August

1005  
00:41:16,190 --> 00:41:21,139  
consultations will be generally with

1006  
00:41:18,260 --> 00:41:23,420  
steak or key stakeholders i'm looking at

1007  
00:41:21,139 --> 00:41:25,460  
preliminary documentation before there's

1008  
00:41:23,420 --> 00:41:31,119  
a further iteration and then it goes out

1009  
00:41:25,460 --> 00:41:31,119  
for more public scrutiny later so the

1010  
00:41:31,869 --> 00:41:36,890  
implementation would not be expected to

1011  
00:41:33,920 --> 00:41:39,269  
begin before 2011 interesting times that

1012  
00:41:36,889 --> 00:41:40,949

we've got ahead of us indeed candid

1013

00:41:39,268 --> 00:41:42,838

so looking forward to more science

1014

00:41:40,949 --> 00:41:45,209

communication in the meantime keep on

1015

00:41:42,838 --> 00:41:47,489

pushing the message yes yeah I think so

1016

00:41:45,208 --> 00:42:07,438

I think so thank you very much professor

1017

00:41:47,489 --> 00:42:09,148

Liang no problem thanks Carly hi this is

1018

00:42:07,438 --> 00:42:12,208

grizzly from the Grizzlies growls

1019

00:42:09,148 --> 00:42:15,208

podcasts at Grizzlies growls calm and

1020

00:42:12,208 --> 00:42:19,198

you're listening to the skeptic so and

1021

00:42:15,208 --> 00:42:26,278

so my but hey don't take my word for it

1022

00:42:19,199 --> 00:42:31,188

oh come on that was funny skeptic don't

1023

00:42:26,278 --> 00:42:31,188

take my word I'll never mind

1024

00:42:44,139 --> 00:42:48,849

thank you for downloading this episode

1025

00:42:46,329 --> 00:42:50,679

of the skeptic zone and thanks to

1026

00:42:48,849 --> 00:42:52,900

everybody who wrote in offering their

1027  
00:42:50,679 --> 00:42:55,509  
help in transcribing some of our

1028  
00:42:52,900 --> 00:42:59,260  
interviews we have enough people for now

1029  
00:42:55,510 --> 00:43:00,940  
and the project is well underway on next

1030  
00:42:59,260 --> 00:43:04,180  
week's show will talk to musician and

1031  
00:43:00,940 --> 00:43:07,510  
podcaster George shrub report on our

1032  
00:43:04,179 --> 00:43:09,730  
trip to Perth and dr. rachy will be back

1033  
00:43:07,510 --> 00:43:12,430  
with dr. Rachel reports and of course

1034  
00:43:09,730 --> 00:43:15,010  
the think tank until then this is

1035  
00:43:12,429 --> 00:43:20,349  
Richard Saunders signing off from Sydney

1036  
00:43:15,010 --> 00:43:24,640  
Australia you've been listening to the

1037  
00:43:20,349 --> 00:43:27,909  
skeptic zone visit our website at wwc a

1038  
00:43:24,639 --> 00:43:31,309  
petting zoo TV for comments contacts and

1039  
00:43:27,909 --> 00:43:34,639  
extra video reports

1040  
00:43:31,309 --> 00:43:37,090  
the skin

1041

00:43:34,639 --> 00:43:37,089

me

1042

00:43:49,969 --> 00:43:52,029

you