



1
00:00:06,550 --> 00:00:04,789
now you all will hear from our esteemed

2
00:00:09,110 --> 00:00:06,560
white house representative and you will

3
00:00:10,629 --> 00:00:09,120
hear all about a whole other career path

4
00:00:13,509 --> 00:00:10,639
that you can take

5
00:00:14,390 --> 00:00:13,519
with a stem degree

6
00:00:17,510 --> 00:00:14,400
and

7
00:00:19,750 --> 00:00:17,520
it's actually been quite a path that our

8
00:00:21,750 --> 00:00:19,760
next speaker has taken

9
00:00:23,590 --> 00:00:21,760
i'd like to introduce dr

10
00:00:24,550 --> 00:00:23,600
patricia falcone

11
00:00:26,870 --> 00:00:24,560
and

12
00:00:29,029 --> 00:00:26,880
dr falcone is the assistant director for

13
00:00:31,029 --> 00:00:29,039

national security in the office of

14

00:00:33,110 --> 00:00:31,039

science and technology policy of the

15

00:00:35,750 --> 00:00:33,120

white house

16

00:00:38,069 --> 00:00:35,760

her work seeks to strengthen innovation

17

00:00:39,910 --> 00:00:38,079

and scientific excellence

18

00:00:42,470 --> 00:00:39,920

particularly as applied to nuclear

19

00:00:44,229 --> 00:00:42,480

security and non-proliferation and more

20

00:00:45,830 --> 00:00:44,239

broadly for homeland and national

21

00:00:47,590 --> 00:00:45,840

security

22

00:00:50,069 --> 00:00:47,600

she's been a member of the professional

23

00:00:53,430 --> 00:00:50,079

staff of sandia national laboratories in

24

00:00:55,670 --> 00:00:53,440

livermore california since 1981.

25

00:00:58,709 --> 00:00:55,680

she served on the board of army science

26
00:01:00,709 --> 00:00:58,719
and technology of the national academies

27
00:01:02,790 --> 00:01:00,719
as well as the nuclear deterrent

28
00:01:05,270 --> 00:01:02,800
transformation panel of the department

29
00:01:07,270 --> 00:01:05,280
of defense's threat reduction advisory

30
00:01:09,350 --> 00:01:07,280
committee

31
00:01:11,270 --> 00:01:09,360
she continues to serve on the mechanical

32
00:01:14,230 --> 00:01:11,280
and aerospace engineering advisory

33
00:01:17,030 --> 00:01:14,240
committee at princeton university

34
00:01:18,390 --> 00:01:17,040
dr falcone holds a bachelor of science

35
00:01:19,109 --> 00:01:18,400
in engineering

36
00:01:22,149 --> 00:01:19,119
of

37
00:01:23,990 --> 00:01:22,159
in engineering and mechanical sciences

38
00:01:26,390 --> 00:01:24,000

from princeton

39

00:01:28,310 --> 00:01:26,400

as well as a master of science and phd

40

00:01:29,990 --> 00:01:28,320

degrees in mechanical engineering i

41

00:01:31,830 --> 00:01:30,000

think it's actually a master's from

42

00:01:32,630 --> 00:01:31,840

princeton got a little bit wrong but you

43

00:01:34,550 --> 00:01:32,640

can

44

00:01:35,590 --> 00:01:34,560

you know better than i

45

00:01:38,149 --> 00:01:35,600

um

46

00:01:50,950 --> 00:01:38,159

and so i would like to introduce dr

47

00:01:54,870 --> 00:01:52,870

well let's see i think she swallowed my

48

00:01:56,630 --> 00:01:54,880

lead because my most important thing is

49

00:01:59,030 --> 00:01:56,640

that it is my undergraduate degree is

50

00:02:01,590 --> 00:01:59,040

aerospace and mechanical

51
00:02:04,550 --> 00:02:01,600
so i do have ties to aerospace i did

52
00:02:06,870 --> 00:02:04,560
lots of time at wind tunnels and

53
00:02:08,790 --> 00:02:06,880
in labs but i did not

54
00:02:11,270 --> 00:02:08,800
get the chance to come to work at nasa

55
00:02:14,150 --> 00:02:11,280
but i was here this morning and let me

56
00:02:16,630 --> 00:02:14,160
just say that this topic of women of

57
00:02:19,510 --> 00:02:16,640
innovation of aerospace of science and

58
00:02:21,510 --> 00:02:19,520
technology are really um sort of my

59
00:02:23,350 --> 00:02:21,520
favorite set of subjects so

60
00:02:26,070 --> 00:02:23,360
it's just terrific that you guys are all

61
00:02:27,589 --> 00:02:26,080
here today and i am very delighted to

62
00:02:29,910 --> 00:02:27,599
have been invited

63
00:02:31,110 --> 00:02:29,920

to get a chance to talk with you

64

00:02:33,670 --> 00:02:31,120

um

65

00:02:36,550 --> 00:02:33,680

i'm also honored as rebecca said to have

66

00:02:38,710 --> 00:02:36,560

the chance to serve president obama and

67

00:02:39,750 --> 00:02:38,720

the president's science advisor dr john

68

00:02:41,589 --> 00:02:39,760

holdren

69

00:02:45,030 --> 00:02:41,599

by working in the white house office of

70

00:02:47,910 --> 00:02:45,040

science and technology policy

71

00:02:50,309 --> 00:02:47,920

and the syllogism for what we do over

72

00:02:53,270 --> 00:02:50,319

there is that we work on the science for

73

00:02:55,430 --> 00:02:53,280

policy and the policy for science which

74

00:02:57,430 --> 00:02:55,440

basically means what are those policies

75

00:02:59,509 --> 00:02:57,440

about the doing of science like the

76

00:03:01,430 --> 00:02:59,519

doing of science and technology and

77

00:03:04,390 --> 00:03:01,440

engineering at nasa at other departments

78

00:03:07,509 --> 00:03:04,400

and agencies and what are those

79

00:03:10,229 --> 00:03:07,519

important issues that of policy that

80

00:03:12,949 --> 00:03:10,239

have a technical dimension and

81

00:03:15,589 --> 00:03:12,959

we need to have an alternate path

82

00:03:17,830 --> 00:03:15,599

or a set of advisors close to the

83

00:03:19,190 --> 00:03:17,840

decision makers in the white house so

84

00:03:21,190 --> 00:03:19,200

that's what we do at the white house

85

00:03:23,030 --> 00:03:21,200

office of science and technology policy

86

00:03:25,750 --> 00:03:23,040

the science for policy and the policy

87

00:03:28,229 --> 00:03:27,190

so today

88

00:03:30,309 --> 00:03:28,239

what

89

00:03:32,309 --> 00:03:30,319

i thought i might do is just spend a

90

00:03:34,710 --> 00:03:32,319

little time talking about two things one

91

00:03:37,270 --> 00:03:34,720

a little bit about my own path

92

00:03:40,070 --> 00:03:37,280

to working as an engineer as beginning

93

00:03:42,789 --> 00:03:40,080

in aerospace and

94

00:03:44,149 --> 00:03:42,799

and then also about to highlight

95

00:03:47,110 --> 00:03:44,159

activities

96

00:03:48,869 --> 00:03:47,120

and actions and policies and strategies

97

00:03:52,070 --> 00:03:48,879

that are going on in this domain of

98

00:03:54,789 --> 00:03:52,080

innovation of attracting

99

00:03:56,630 --> 00:03:54,799

more americans to science technology

100

00:03:59,350 --> 00:03:56,640

engineering and mathematics and in

101

00:04:01,830 --> 00:03:59,360

particular trying to get folks that we

102

00:04:04,470 --> 00:04:01,840

don't have in proportions

103

00:04:06,390 --> 00:04:04,480

in our population in the stem fields

104

00:04:07,670 --> 00:04:06,400

stem i hope we've already been using

105

00:04:10,470 --> 00:04:07,680

that today so i'm just going to say it

106

00:04:12,149 --> 00:04:10,480

as an acronym from here henceforth

107

00:04:15,589 --> 00:04:12,159

and that includes women and that

108

00:04:17,270 --> 00:04:15,599

includes minorities that includes

109

00:04:19,909 --> 00:04:17,280

lots of people that just haven't been

110

00:04:23,990 --> 00:04:21,670

and then answer questions i hope we have

111

00:04:25,670 --> 00:04:24,000

time to answer questions you're really i

112

00:04:27,590 --> 00:04:25,680

was fortunate to hear the panel this

113

00:04:29,590 --> 00:04:27,600

morning and i think it's even revved up

114

00:04:31,670 --> 00:04:29,600

since then i guess in terms of lots of

115

00:04:33,670 --> 00:04:31,680

engagement back and forth

116

00:04:35,189 --> 00:04:33,680

but let's see i did say that my

117

00:04:36,469 --> 00:04:35,199

undergraduate work is in aerospace and

118

00:04:38,550 --> 00:04:36,479

mechanical

119

00:04:40,469 --> 00:04:38,560

at my undergraduate university those two

120

00:04:42,790 --> 00:04:40,479

domains are together

121

00:04:44,469 --> 00:04:42,800

what i studied both as an undergraduate

122

00:04:47,189 --> 00:04:44,479

and as a graduate student is in

123

00:04:50,390 --> 00:04:47,199

combustion and propulsion i was very

124

00:04:51,350 --> 00:04:50,400

interested in how pollutants formed

125

00:04:53,110 --> 00:04:51,360

and

126

00:04:54,790 --> 00:04:53,120

so the first time around we worked on

127

00:04:56,710 --> 00:04:54,800

environmental things back in the gas

128

00:04:58,550 --> 00:04:56,720

crisis in the 70s

129

00:05:00,390 --> 00:04:58,560

and so really understanding the

130

00:05:01,909 --> 00:05:00,400

chemistry of what went on

131

00:05:03,830 --> 00:05:01,919

was important to me

132

00:05:05,270 --> 00:05:03,840

i worked as on doing an undergraduate

133

00:05:07,110 --> 00:05:05,280

research program

134

00:05:08,390 --> 00:05:07,120

research activity when i was a sophomore

135

00:05:10,390 --> 00:05:08,400

and for those of you that are still in

136

00:05:12,469 --> 00:05:10,400

school or have yet to go to college i

137

00:05:14,150 --> 00:05:12,479

guess i would like to highlight

138

00:05:15,830 --> 00:05:14,160

the opportunities that you have at just

139

00:05:17,350 --> 00:05:15,840

about all universities to get involved

140

00:05:19,909 --> 00:05:17,360

in research with professors because it

141

00:05:22,070 --> 00:05:19,919

was very important to me

142

00:05:24,070 --> 00:05:22,080

and my education and motivating class

143

00:05:25,830 --> 00:05:24,080

work and then of course it turned out to

144

00:05:27,830 --> 00:05:25,840

have been a great thing to have done for

145

00:05:30,870 --> 00:05:27,840

applying to graduate school and for

146

00:05:33,510 --> 00:05:30,880

really seeing how fields come together

147

00:05:35,670 --> 00:05:33,520

and in graduate school i went to the

148

00:05:36,550 --> 00:05:35,680

mechanical engineering department

149

00:05:41,350 --> 00:05:36,560

and

150

00:05:43,029 --> 00:05:41,360

worked on a new laser-based diagnostic

151
00:05:45,430 --> 00:05:43,039
to again measure

152
00:05:48,469 --> 00:05:45,440
pollutant formation and try to

153
00:05:51,029 --> 00:05:48,479
understand the processes involved

154
00:05:52,310 --> 00:05:51,039
why did i become an engineer

155
00:05:54,550 --> 00:05:52,320
you know i think it's always these

156
00:05:57,510 --> 00:05:54,560
things are in the dark recesses of time

157
00:06:00,390 --> 00:05:57,520
the truth is my dad was and we heard

158
00:06:02,950 --> 00:06:00,400
about parents this morning my dad really

159
00:06:04,629 --> 00:06:02,960
said that gosh um you know if i really

160
00:06:06,070 --> 00:06:04,639
needed a scholarship which i did i was

161
00:06:07,749 --> 00:06:06,080
the oldest of four kids my dad was in

162
00:06:10,150 --> 00:06:07,759
the air force that i could really get a

163
00:06:11,670 --> 00:06:10,160

better scholarship doing engineering i

164

00:06:13,590 --> 00:06:11,680

suppose at that time i thought i might

165

00:06:15,510 --> 00:06:13,600

go be a math teacher because i liked

166

00:06:18,230 --> 00:06:15,520

math but i liked lots of other things i

167

00:06:21,029 --> 00:06:18,240

liked to read i liked writing

168

00:06:22,390 --> 00:06:21,039

speaking things like that but um i

169

00:06:24,390 --> 00:06:22,400

didn't know what engineering was other

170

00:06:26,870 --> 00:06:24,400

than you could get scholarships but what

171

00:06:28,790 --> 00:06:26,880

i was told then and i guess i still

172

00:06:31,029 --> 00:06:28,800

think having done worked as an engineer

173

00:06:32,950 --> 00:06:31,039

now for probably 30 years

174

00:06:34,790 --> 00:06:32,960

is that if you like math and science but

175

00:06:36,550 --> 00:06:34,800

you want to use it to do something

176

00:06:38,230 --> 00:06:36,560

that's what engineering is

177

00:06:40,230 --> 00:06:38,240

and i say that advisedly because i am

178

00:06:42,629 --> 00:06:40,240

married to a physicist and so i think

179

00:06:43,990 --> 00:06:42,639

the engineers are more on the doing

180

00:06:46,629 --> 00:06:44,000

things with it as opposed to just

181

00:06:48,469 --> 00:06:46,639

pushing the frontiers of science back

182

00:06:50,790 --> 00:06:48,479

i went to high school in san antonio

183

00:06:53,510 --> 00:06:50,800

texas and someone mentioned louisiana

184

00:06:55,350 --> 00:06:53,520

state university this morning and i was

185

00:06:57,589 --> 00:06:55,360

fortunate to attend a summer science

186

00:06:59,430 --> 00:06:57,599

program at lsu

187

00:07:02,230 --> 00:06:59,440

while i was still in high school and

188

00:07:05,189 --> 00:07:02,240

this was sort of a residual

189

00:07:07,430 --> 00:07:05,199

program to attract kids to science

190

00:07:09,189 --> 00:07:07,440

to stem really that was a post sputnik

191

00:07:11,589 --> 00:07:09,199

program so it's interesting we've tried

192

00:07:14,830 --> 00:07:11,599

to you know entice people i got enticed

193

00:07:17,430 --> 00:07:14,840

and it really worked out great for me

194

00:07:19,909 --> 00:07:17,440

um let's see this morning we spent a lot

195

00:07:21,670 --> 00:07:19,919

of time on anecdotes i have a long list

196

00:07:23,749 --> 00:07:21,680

of anecdotes because i went to a college

197

00:07:26,070 --> 00:07:23,759

that had never had women before

198

00:07:27,430 --> 00:07:26,080

and i was the first woman to go through

199

00:07:29,749 --> 00:07:27,440

all four years of the engineering

200

00:07:31,589 --> 00:07:29,759

program there and um

201
00:07:32,950 --> 00:07:31,599
so there were a lot of oddities however

202
00:07:34,469 --> 00:07:32,960
i would guess that i would say that

203
00:07:36,550 --> 00:07:34,479
having done that

204
00:07:38,950 --> 00:07:36,560
everything else really has been easier

205
00:07:41,830 --> 00:07:38,960
and you just learn that if you've got

206
00:07:43,670 --> 00:07:41,840
your tool kit with uh skills in it that

207
00:07:46,790 --> 00:07:43,680
that work is so much fun you just use

208
00:07:48,550 --> 00:07:46,800
them and keep on going

209
00:07:51,029 --> 00:07:48,560
so

210
00:07:53,830 --> 00:07:51,039
let's see let me just say a few things

211
00:07:55,029 --> 00:07:53,840
about my own perspectives just summing

212
00:07:57,270 --> 00:07:55,039
up and then i'll talk about the

213
00:07:59,270 --> 00:07:57,280

president's program which is that you

214

00:08:00,629 --> 00:07:59,280

know there's lots of different view jobs

215

00:08:02,309 --> 00:08:00,639

and i think you've already heard that

216

00:08:03,990 --> 00:08:02,319

today but the fact is that engineering

217

00:08:05,990 --> 00:08:04,000

is really fun

218

00:08:08,070 --> 00:08:06,000

and so i those of you that still have

219

00:08:10,230 --> 00:08:08,080

the chance to study engineering i would

220

00:08:12,469 --> 00:08:10,240

say do it

221

00:08:14,309 --> 00:08:12,479

and what's fun about a job is just that

222

00:08:15,909 --> 00:08:14,319

you have the satisfaction then of honing

223

00:08:18,550 --> 00:08:15,919

those skills you build those school

224

00:08:21,350 --> 00:08:18,560

skills in school you hone them as you

225

00:08:22,790 --> 00:08:21,360

get greater um you know different

226

00:08:24,790 --> 00:08:22,800

assignments you use something you

227

00:08:26,950 --> 00:08:24,800

learned one place on the next job

228

00:08:27,830 --> 00:08:26,960

there's always something changing it's

229

00:08:29,350 --> 00:08:27,840

um

230

00:08:31,909 --> 00:08:29,360

just quite fun

231

00:08:33,589 --> 00:08:31,919

and um

232

00:08:35,829 --> 00:08:33,599

you know you're part of something bigger

233

00:08:37,670 --> 00:08:35,839

i mean where i have been i've worked had

234

00:08:40,310 --> 00:08:37,680

the privilege to work at one of the

235

00:08:44,630 --> 00:08:40,320

nation's national laboratories sandia

236

00:08:47,110 --> 00:08:44,640

and like nasa this is a place where

237

00:08:49,670 --> 00:08:47,120

one you can do wonderful work

238

00:08:52,150 --> 00:08:49,680

technical work of national importance

239

00:08:53,670 --> 00:08:52,160

and it has a place that

240

00:08:55,670 --> 00:08:53,680

you have both the privilege and the

241

00:08:57,030 --> 00:08:55,680

responsibility of spending taxpayer

242

00:08:58,310 --> 00:08:57,040

dollars

243

00:09:00,150 --> 00:08:58,320

on what you do and that is a big

244

00:09:02,710 --> 00:09:00,160

responsibility especially given how

245

00:09:04,790 --> 00:09:02,720

straightened times are

246

00:09:06,630 --> 00:09:04,800

you can make a career of it doing a

247

00:09:08,790 --> 00:09:06,640

variety of different challenges that's

248

00:09:10,389 --> 00:09:08,800

what i've been able to do

249

00:09:12,150 --> 00:09:10,399

worked on lots of different projects

250

00:09:14,070 --> 00:09:12,160

with lots of different people with other

251

00:09:16,389 --> 00:09:14,080

parts of the government but always

252

00:09:18,150 --> 00:09:16,399

growing my technical skills

253

00:09:21,030 --> 00:09:18,160

and the most i know about nasa is that

254

00:09:23,190 --> 00:09:21,040

one of my old office mates

255

00:09:26,710 --> 00:09:23,200

and uh collaborators ellen ochoa was

256

00:09:28,949 --> 00:09:26,720

selected as an astronaut around 1990 and

257

00:09:31,750 --> 00:09:28,959

uh so i've had the privilege of um

258

00:09:32,550 --> 00:09:31,760

knowing ellen from the time she applied

259

00:09:34,310 --> 00:09:32,560

through

260

00:09:36,389 --> 00:09:34,320

seeing her recently here in washington

261

00:09:37,990 --> 00:09:36,399

where she comes as i guess many of you

262

00:09:40,310 --> 00:09:38,000

know because she's the deputy director

263

00:09:42,150 --> 00:09:40,320

at johnson space center now

264

00:09:44,070 --> 00:09:42,160

great thing was she did come and it's

265

00:09:45,670 --> 00:09:44,080

fun to have been with ellen because you

266

00:09:47,190 --> 00:09:45,680

know if i say i'm an engineer people's

267

00:09:48,949 --> 00:09:47,200

eyes kind of glaze over and when she

268

00:09:51,030 --> 00:09:48,959

says she's an astronaut it's just their

269

00:09:52,310 --> 00:09:51,040

eyes light up i think gosh we used to be

270

00:09:53,030 --> 00:09:52,320

the same

271

00:09:54,870 --> 00:09:53,040

but

272

00:09:58,070 --> 00:09:54,880

alan being an astronaut she came and

273

00:09:59,670 --> 00:09:58,080

talked at my kids elementary school

274

00:10:02,150 --> 00:09:59,680

years ago and

275

00:10:03,750 --> 00:10:02,160

she had want gotten an award nearby and

276

00:10:05,350 --> 00:10:03,760

so when i met her when she came to my

277

00:10:06,389 --> 00:10:05,360

house she was in her business suit and i

278

00:10:08,310 --> 00:10:06,399

said okay we can go down to the school

279

00:10:10,230 --> 00:10:08,320

she says no no i have to change and i

280

00:10:12,150 --> 00:10:10,240

said no you don't you can just go she

281

00:10:15,110 --> 00:10:12,160

says no the kids never believe i'm an

282

00:10:17,509 --> 00:10:15,120

astronaut unless i'm in my flight suit

283

00:10:19,190 --> 00:10:17,519

and sure enough that was true but anyway

284

00:10:21,110 --> 00:10:19,200

so it's much more exciting i guess than

285

00:10:22,710 --> 00:10:21,120

just being an engineer

286

00:10:24,710 --> 00:10:22,720

but um

287

00:10:26,310 --> 00:10:24,720

let me just say that you know as kathy

288

00:10:27,829 --> 00:10:26,320

said this morning i thought the really

289

00:10:29,190 --> 00:10:27,839

good comment about your career being a

290

00:10:30,949 --> 00:10:29,200

journey you know when you tell it from

291

00:10:32,550 --> 00:10:30,959

the point i'm at it all looks like it

292

00:10:34,630 --> 00:10:32,560

all fell together but it's never like

293

00:10:36,150 --> 00:10:34,640

that you know you make choices and so

294

00:10:37,590 --> 00:10:36,160

what's important is being open to

295

00:10:39,509 --> 00:10:37,600

opportunities

296

00:10:41,590 --> 00:10:39,519

realizing people can't read your mind so

297

00:10:43,670 --> 00:10:41,600

it's up to you to say what you like what

298

00:10:45,269 --> 00:10:43,680

you don't like what has been good about

299

00:10:46,790 --> 00:10:45,279

an assignment or where you might need

300

00:10:49,110 --> 00:10:46,800

help

301
00:10:50,870 --> 00:10:49,120
you have to continue learning and my

302
00:10:52,790 --> 00:10:50,880
advice for jobs is always pick the

303
00:10:55,269 --> 00:10:52,800
hardest jobs you see

304
00:10:57,190 --> 00:10:55,279
with the best colleagues so because you

305
00:10:59,269 --> 00:10:57,200
always want to have people that you can

306
00:11:01,350 --> 00:10:59,279
learn from to work with

307
00:11:05,269 --> 00:11:01,360
and i would make a set of comments on

308
00:11:07,190 --> 00:11:05,279
work-life balance always a topic here

309
00:11:09,990 --> 00:11:07,200
and i followed the advice of millie

310
00:11:12,230 --> 00:11:10,000
dresslehouse a very famous physicist who

311
00:11:13,670 --> 00:11:12,240
is a professor at mit who had won a

312
00:11:15,829 --> 00:11:13,680
conference just like this when i was a

313
00:11:18,949 --> 00:11:15,839

young staff member i went and someone

314

00:11:22,630 --> 00:11:18,959

asked her well melanie has four children

315

00:11:24,389 --> 00:11:22,640

ask her how do you be a physicist and

316

00:11:25,750 --> 00:11:24,399

you know have this family and she said

317

00:11:27,110 --> 00:11:25,760

well the most important thing is to pick

318

00:11:29,990 --> 00:11:27,120

a good husband

319

00:11:32,069 --> 00:11:30,000

so i think that i followed that rubric

320

00:11:34,470 --> 00:11:32,079

and that's worked out um

321

00:11:35,509 --> 00:11:34,480

i will also say that i benefited from

322

00:11:37,030 --> 00:11:35,519

both

323

00:11:39,430 --> 00:11:37,040

lobbying for

324

00:11:43,190 --> 00:11:39,440

being a guinea pig of evolving work-life

325

00:11:45,829 --> 00:11:43,200

policies at sandia you know at

326

00:11:47,829 --> 00:11:45,839

college and graduate school

327

00:11:49,350 --> 00:11:47,839

from conferences like this i think you

328

00:11:51,910 --> 00:11:49,360

know the technical work is fun but it's

329

00:11:53,190 --> 00:11:51,920

always good to check in with other women

330

00:11:55,110 --> 00:11:53,200

so you don't if you're all alone

331

00:11:57,590 --> 00:11:55,120

someplace that you at least feel like

332

00:11:59,350 --> 00:11:57,600

you've got a network to plug in and then

333

00:12:02,710 --> 00:11:59,360

to stand up and make change i mean

334

00:12:03,990 --> 00:12:02,720

nobody knows you know necessarily what's

335

00:12:06,230 --> 00:12:04,000

wrong and so you've got to be willing to

336

00:12:08,150 --> 00:12:06,240

volunteer both for in-reach activities

337

00:12:11,030 --> 00:12:08,160

to make your own workplace better and

338

00:12:13,670 --> 00:12:11,040

for outreach activities to give back to

339

00:12:15,269 --> 00:12:13,680

kids coming along

340

00:12:18,550 --> 00:12:15,279

you know i'm sorry i missed the talk

341

00:12:21,030 --> 00:12:18,560

about scouting i'm a big fan of scouts i

342

00:12:24,150 --> 00:12:21,040

did lead a scout troop when my daughter

343

00:12:25,670 --> 00:12:24,160

was younger and was a girl scout and uh

344

00:12:28,389 --> 00:12:25,680

with this anniversary this year i'm

345

00:12:30,150 --> 00:12:28,399

remembering to the 50th anniversary when

346

00:12:31,590 --> 00:12:30,160

i was a scout we all made signs and i

347

00:12:33,430 --> 00:12:31,600

was just thinking about this it sounds a

348

00:12:35,509 --> 00:12:33,440

little creepy now but we did all make

349

00:12:37,910 --> 00:12:35,519

signs to put in front of our house that

350

00:12:39,750 --> 00:12:37,920

said a girl scout lives here but somehow

351
00:12:42,069 --> 00:12:39,760
in this day and age maybe that wasn't a

352
00:12:44,790 --> 00:12:42,079
good thing but at the time i built this

353
00:12:46,150 --> 00:12:44,800
sign with my dad and it was just so cool

354
00:12:48,949 --> 00:12:46,160
and that was celebrating another

355
00:12:52,150 --> 00:12:48,959
anniversary of scouting

356
00:12:53,829 --> 00:12:52,160
but let me talk um

357
00:12:56,629 --> 00:12:53,839
and let me just also say that it's just

358
00:12:58,710 --> 00:12:56,639
an incredible high to have had my career

359
00:13:00,310 --> 00:12:58,720
to have had kids to work part-time for a

360
00:13:03,430 --> 00:13:00,320
while to have taken a year off when my

361
00:13:05,829 --> 00:13:03,440
son was born and to have now with my son

362
00:13:07,750 --> 00:13:05,839
in college and my daughter turning 28

363
00:13:09,190 --> 00:13:07,760

this month you know to have had this

364

00:13:11,350 --> 00:13:09,200

opportunity to be asked to come to the

365

00:13:13,350 --> 00:13:11,360

white house so i would never guess that

366

00:13:15,350 --> 00:13:13,360

would have happened i didn't necessarily

367

00:13:17,190 --> 00:13:15,360

stay on the straight and narrow through

368

00:13:19,590 --> 00:13:17,200

my career i worked on things that were

369

00:13:21,269 --> 00:13:19,600

hard with good colleagues and it all

370

00:13:23,110 --> 00:13:21,279

kind of works out and i got this chance

371

00:13:24,629 --> 00:13:23,120

and i think that's another thing to know

372

00:13:27,269 --> 00:13:24,639

that's not obvious

373

00:13:28,949 --> 00:13:27,279

is that your kids do grow up and your

374

00:13:31,030 --> 00:13:28,959

career goes on a long time and there's

375

00:13:32,949 --> 00:13:31,040

time to do lots of different things and

376

00:13:33,829 --> 00:13:32,959

what is so terrific

377

00:13:35,269 --> 00:13:33,839

is

378

00:13:37,269 --> 00:13:35,279

to be a part

379

00:13:38,629 --> 00:13:37,279

of supporting dr holdren and the

380

00:13:41,030 --> 00:13:38,639

president

381

00:13:43,350 --> 00:13:41,040

and the first lady and their supportive

382

00:13:45,670 --> 00:13:43,360

issues about stem and particularly about

383

00:13:49,189 --> 00:13:45,680

women and girls

384

00:13:51,590 --> 00:13:49,199

i have personally been able to watch

385

00:13:53,990 --> 00:13:51,600

and to staff events where the president

386

00:13:56,230 --> 00:13:54,000

and the first lady have personally been

387

00:13:57,990 --> 00:13:56,240

focused on the goal of increasing

388

00:13:59,910 --> 00:13:58,000

participation of women and girls where

389

00:14:02,150 --> 00:13:59,920

they've celebrated teachers

390

00:14:03,750 --> 00:14:02,160

where they've celebrated students at the

391

00:14:05,829 --> 00:14:03,760

second white house science fair that we

392

00:14:07,829 --> 00:14:05,839

just had that i hope you saw some of the

393

00:14:10,710 --> 00:14:07,839

video from if you didn't see the

394

00:14:13,189 --> 00:14:10,720

president and the young man from arizona

395

00:14:14,870 --> 00:14:13,199

and his marshmallow cannon that's on a

396

00:14:18,310 --> 00:14:14,880

youtube video and it's really worth

397

00:14:22,310 --> 00:14:20,310

and you know the president the first

398

00:14:24,790 --> 00:14:22,320

lady they really do understand that jump

399

00:14:26,629 --> 00:14:24,800

starting girls interest in stem subjects

400

00:14:28,790 --> 00:14:26,639

and boosting the number of women in

401
00:14:30,710 --> 00:14:28,800
science and engineering

402
00:14:32,949 --> 00:14:30,720
is not just the right thing to do but

403
00:14:34,310 --> 00:14:32,959
it's smart for america's future and for

404
00:14:36,629 --> 00:14:34,320
the economy

405
00:14:38,710 --> 00:14:36,639
and so there's a number of programs you

406
00:14:40,629 --> 00:14:38,720
could go to whitehouse.gov see lots of

407
00:14:42,629 --> 00:14:40,639
pictures we do lots of events we've

408
00:14:44,790 --> 00:14:42,639
celebrated champions of change trying to

409
00:14:46,470 --> 00:14:44,800
support you know programs individual

410
00:14:47,590 --> 00:14:46,480
programs and individual communities

411
00:14:49,509 --> 00:14:47,600
because in the end that's what you've

412
00:14:51,829 --> 00:14:49,519
got to do it's about individuals making

413
00:14:53,829 --> 00:14:51,839

decisions but giving them the support

414

00:14:56,389 --> 00:14:53,839

and painting a picture of how fun it's

415

00:14:59,030 --> 00:14:56,399

going to be on the other end

416

00:15:01,189 --> 00:14:59,040

and you know even the president um

417

00:15:02,870 --> 00:15:01,199

hosted winners of the first google

418

00:15:04,310 --> 00:15:02,880

science fair and i hope you also saw

419

00:15:06,310 --> 00:15:04,320

that all three winners of the first

420

00:15:09,430 --> 00:15:06,320

google science fair were women

421

00:15:11,590 --> 00:15:09,440

and so an absolutely terrific picture

422

00:15:13,590 --> 00:15:11,600

but also let me talk about the bigger

423

00:15:15,910 --> 00:15:13,600

picture about innovation there is the

424

00:15:18,790 --> 00:15:15,920

president's strategy for innovation

425

00:15:20,790 --> 00:15:18,800

came out originally in 2009 was updated

426
00:15:23,990 --> 00:15:20,800
in 2011

427
00:15:26,790 --> 00:15:24,000
and basically the point is to have

428
00:15:30,949 --> 00:15:26,800
innovation for sustainable growth growth

429
00:15:32,949 --> 00:15:30,959
of the economy and for quality jobs and

430
00:15:34,629 --> 00:15:32,959
i actually brought this triangle because

431
00:15:36,230 --> 00:15:34,639
often i show it but just to give you the

432
00:15:38,550 --> 00:15:36,240
image of a triangle it's got kind of

433
00:15:40,710 --> 00:15:38,560
three parts and let me just speak to to

434
00:15:43,030 --> 00:15:40,720
them the base is to invest in the

435
00:15:45,110 --> 00:15:43,040
building blocks of american innovation

436
00:15:47,189 --> 00:15:45,120
the middle portion is about how do we

437
00:15:49,509 --> 00:15:47,199
spur productive entrepreneurship and

438
00:15:51,910 --> 00:15:49,519

promote efficiency in our systems and

439

00:15:53,749 --> 00:15:51,920

the top is how to have a focus to

440

00:15:56,150 --> 00:15:53,759

catalyze breakthroughs on national

441

00:15:58,949 --> 00:15:56,160

priorities so going back to the base the

442

00:16:00,550 --> 00:15:58,959

most fundamental part of this strategy

443

00:16:01,829 --> 00:16:00,560

the president's strategy for innovation

444

00:16:03,269 --> 00:16:01,839

and let me say that you can go to

445

00:16:05,829 --> 00:16:03,279

whitehouse.gov and read the whole

446

00:16:08,069 --> 00:16:05,839

document and see the charts

447

00:16:10,629 --> 00:16:08,079

is there's really two parts to that base

448

00:16:13,350 --> 00:16:10,639

first to strengthen and broaden american

449

00:16:15,990 --> 00:16:13,360

leadership in fundamental research and

450

00:16:19,430 --> 00:16:16,000

then second to educate americans with

451
00:16:22,310 --> 00:16:19,440
21st skills 21st century skills and

452
00:16:24,710 --> 00:16:22,320
create a world-class workforce and the

453
00:16:25,990 --> 00:16:24,720
point of a work world-class workforce is

454
00:16:27,749 --> 00:16:26,000
to address these issues of

455
00:16:30,389 --> 00:16:27,759
under-representation

456
00:16:32,069 --> 00:16:30,399
to improve the teaching of science

457
00:16:34,629 --> 00:16:32,079
technology engineering and mathematics

458
00:16:35,829 --> 00:16:34,639
based on what we know now more about

459
00:16:37,829 --> 00:16:35,839
brain

460
00:16:39,910 --> 00:16:37,839
function and how the best ways to learn

461
00:16:42,470 --> 00:16:39,920
so that we don't teach classes in a way

462
00:16:44,629 --> 00:16:42,480
that might turn off some students carl

463
00:16:46,949 --> 00:16:44,639

wyman who is the associate director of

464

00:16:48,629 --> 00:16:46,959

science at ostp

465

00:16:50,949 --> 00:16:48,639

is very passionate about this subject

466

00:16:53,749 --> 00:16:50,959

about how do you actually teach science

467

00:16:54,710 --> 00:16:53,759

and engineering in a way um

468

00:16:55,990 --> 00:16:54,720

that

469

00:16:57,590 --> 00:16:56,000

you know what's called deliberate

470

00:16:59,430 --> 00:16:57,600

practice it's like learning to play a

471

00:17:01,590 --> 00:16:59,440

musical instrument or do a sport it's

472

00:17:03,910 --> 00:17:01,600

not about natural ability it's about

473

00:17:05,590 --> 00:17:03,920

practicing at the level getting better

474

00:17:07,590 --> 00:17:05,600

by practicing

475

00:17:09,110 --> 00:17:07,600

and so there's a lot of reform movement

476

00:17:10,949 --> 00:17:09,120

the president's council advisors on

477

00:17:13,189 --> 00:17:10,959

science and technology

478

00:17:15,429 --> 00:17:13,199

also has just done a two reports in this

479

00:17:17,990 --> 00:17:15,439

area and so let me just say if you

480

00:17:19,350 --> 00:17:18,000

somehow heard from older siblings or

481

00:17:21,189 --> 00:17:19,360

something that

482

00:17:22,789 --> 00:17:21,199

engineering classes are boring they're

483

00:17:24,549 --> 00:17:22,799

getting better

484

00:17:26,390 --> 00:17:24,559

and there's really

485

00:17:29,350 --> 00:17:26,400

you know an effort to try to make it

486

00:17:32,230 --> 00:17:29,360

match to all kinds of different brains

487

00:17:33,750 --> 00:17:32,240

and not just to one way

488

00:17:35,350 --> 00:17:33,760

and i think the other thing that goes

489

00:17:37,830 --> 00:17:35,360

without saying is that you know a

490

00:17:39,750 --> 00:17:37,840

democracy depends upon an educated

491

00:17:41,669 --> 00:17:39,760

citizenry and the issues are so

492

00:17:44,150 --> 00:17:41,679

important that everybody's got to have a

493

00:17:46,310 --> 00:17:44,160

fundamental basis of thinking about

494

00:17:49,110 --> 00:17:46,320

technical issues about having a

495

00:17:51,430 --> 00:17:49,120

quantitative approach even if they don't

496

00:17:53,029 --> 00:17:51,440

choose to do it as their profession

497

00:17:55,190 --> 00:17:53,039

so having

498

00:17:57,430 --> 00:17:55,200

programs to increase the numbers of

499

00:17:59,990 --> 00:17:57,440

technically trained teachers

500

00:18:01,990 --> 00:18:00,000

at all levels elementary school junior

501
00:18:04,870 --> 00:18:02,000
high high school into college is just

502
00:18:06,710 --> 00:18:04,880
important for us overall as a nation

503
00:18:09,510 --> 00:18:06,720
to have good workers for a global

504
00:18:12,150 --> 00:18:09,520
economy and to have stem

505
00:18:15,830 --> 00:18:12,160
professionals that represent all of us

506
00:18:19,990 --> 00:18:17,669
so lots of people are going out and

507
00:18:22,150 --> 00:18:20,000
talking there is a the white house

508
00:18:24,310 --> 00:18:22,160
counsel on women and girls

509
00:18:25,669 --> 00:18:24,320
has chosen this or this is a key

510
00:18:28,549 --> 00:18:25,679
activity

511
00:18:31,270 --> 00:18:28,559
for them and it makes sure that every

512
00:18:33,350 --> 00:18:31,280
agency and all the work that it does

513
00:18:35,110 --> 00:18:33,360

considers the needs of women and girls

514

00:18:36,870 --> 00:18:35,120

in the decisions

515

00:18:38,710 --> 00:18:36,880

that you know each agency makes

516

00:18:39,830 --> 00:18:38,720

including nasa and i'm sure they have

517

00:18:42,390 --> 00:18:39,840

been engaged with the white house

518

00:18:44,470 --> 00:18:42,400

council on women and girls

519

00:18:46,230 --> 00:18:44,480

so if we've got all this effort in stem

520

00:18:49,270 --> 00:18:46,240

what's the next point and you've got

521

00:18:54,630 --> 00:18:51,909

to sort of entice people to say yes it's

522

00:18:56,150 --> 00:18:54,640

you know it's all going to work out

523

00:18:58,150 --> 00:18:56,160

it's great the other thing is what are

524

00:19:00,230 --> 00:18:58,160

those um approaches to making the

525

00:19:02,070 --> 00:19:00,240

workplace be something that people want

526

00:19:03,270 --> 00:19:02,080

to stay in for a career

527

00:19:05,750 --> 00:19:03,280

and

528

00:19:06,870 --> 00:19:05,760

let me just say i've had a great time

529

00:19:08,630 --> 00:19:06,880

um

530

00:19:10,470 --> 00:19:08,640

let me say more about role models i

531

00:19:11,990 --> 00:19:10,480

didn't say explicitly

532

00:19:13,590 --> 00:19:12,000

you know there's many women you heard

533

00:19:15,990 --> 00:19:13,600

many this morning that are already in

534

00:19:17,590 --> 00:19:16,000

the administration but epa administrator

535

00:19:19,270 --> 00:19:17,600

lisa jackson is an engineer i like to

536

00:19:21,190 --> 00:19:19,280

lead with the engineers

537

00:19:23,190 --> 00:19:21,200

the administrator for noaa the national

538

00:19:26,549 --> 00:19:23,200

oceanic and atmospheric administration

539

00:19:28,710 --> 00:19:26,559

is jane lubchenko a marine scientist the

540

00:19:30,549 --> 00:19:28,720

head of the u.s geological survey is

541

00:19:32,630 --> 00:19:30,559

also a woman i actually sat next to her

542

00:19:34,789 --> 00:19:32,640

on an airplane not too long ago marcia

543

00:19:36,950 --> 00:19:34,799

mcnutt she's a geophysicist

544

00:19:39,830 --> 00:19:36,960

the chief scientist of the department of

545

00:19:41,909 --> 00:19:39,840

agriculture is kathy wotecki

546

00:19:44,070 --> 00:19:41,919

and the director of the darpa the

547

00:19:46,230 --> 00:19:44,080

defense advanced projects administration

548

00:19:48,310 --> 00:19:46,240

regina dugan is a mechanical engineer

549

00:19:50,150 --> 00:19:48,320

also

550

00:19:52,710 --> 00:19:50,160

so

551

00:19:55,270 --> 00:19:52,720

lots is happening here lots

552

00:19:56,870 --> 00:19:55,280

a lot of openings for new ideas

553

00:19:58,710 --> 00:19:56,880

but a lot of action a lot of people have

554

00:20:01,190 --> 00:19:58,720

been committed to spending every day

555

00:20:02,789 --> 00:20:01,200

trying to make things better and from

556

00:20:04,630 --> 00:20:02,799

the very top

557

00:20:09,990 --> 00:20:04,640

from the president so i hope that makes

558

00:20:13,830 --> 00:20:12,070

you know i guess what i would say is

559

00:20:15,430 --> 00:20:13,840

first of all be intentional you know

560

00:20:16,789 --> 00:20:15,440

think carefully about what you're doing

561

00:20:19,430 --> 00:20:16,799

and about

562

00:20:21,350 --> 00:20:19,440

you know sometimes i know i often try to

563

00:20:23,669 --> 00:20:21,360

i used to have a long commute driving to

564

00:20:25,270 --> 00:20:23,679

my job and so when i was in the car i if

565

00:20:27,110 --> 00:20:25,280

i was feeling in a grumpy mood i'd say

566

00:20:29,270 --> 00:20:27,120

now why exactly am i having to have this

567

00:20:30,870 --> 00:20:29,280

long commute what is the point about

568

00:20:33,350 --> 00:20:30,880

this job and i would have to think okay

569

00:20:34,870 --> 00:20:33,360

now i choose to do this job because

570

00:20:36,789 --> 00:20:34,880

and the commute goes with the fact that

571

00:20:38,630 --> 00:20:36,799

i also choose to sleep with my husband

572

00:20:39,510 --> 00:20:38,640

whose job is a little further the other

573

00:20:41,669 --> 00:20:39,520

way

574

00:20:43,510 --> 00:20:41,679

and uh so i think the point is is that

575

00:20:46,070 --> 00:20:43,520

you're in charge of your life nobody

576

00:20:47,190 --> 00:20:46,080

else is and so if you kind of wander

577

00:20:49,029 --> 00:20:47,200

around

578

00:20:51,590 --> 00:20:49,039

it's kind of your own problem so it's

579

00:20:53,190 --> 00:20:51,600

important to be intentional realize that

580

00:20:54,710 --> 00:20:53,200

if you're in a boring meeting why are

581

00:20:55,750 --> 00:20:54,720

you in that boring meeting and what can

582

00:20:58,390 --> 00:20:55,760

you do to either make it more

583

00:21:00,789 --> 00:20:58,400

interesting either leave or you know

584

00:21:02,470 --> 00:21:00,799

find another job but just don't waste

585

00:21:05,430 --> 00:21:02,480

your own time

586

00:21:06,950 --> 00:21:05,440

mentor give back

587

00:21:09,029 --> 00:21:06,960

i already talked about that but i do

588

00:21:10,549 --> 00:21:09,039

think that's important

589

00:21:12,549 --> 00:21:10,559

speaking up

590

00:21:14,070 --> 00:21:12,559

you know you do have a responsibility to

591

00:21:15,669 --> 00:21:14,080

make things better in your own school

592

00:21:17,029 --> 00:21:15,679

and i'm you know hearing the things that

593

00:21:19,350 --> 00:21:17,039

were talked about this morning many of

594

00:21:21,029 --> 00:21:19,360

you already organizing your own groups

595

00:21:22,070 --> 00:21:21,039

you're organizing your own networks i

596

00:21:23,830 --> 00:21:22,080

mean i

597

00:21:26,070 --> 00:21:23,840

think about the context in which you do

598

00:21:27,590 --> 00:21:26,080

work and i think that you know includes

599

00:21:29,190 --> 00:21:27,600

women and innovation and by showing up

600

00:21:30,549 --> 00:21:29,200

today that's clear all of you are

601
00:21:32,710 --> 00:21:30,559
already thinking about the broader

602
00:21:34,390 --> 00:21:32,720
context in which you do national

603
00:21:36,630 --> 00:21:34,400
security and once you do national

604
00:21:38,870 --> 00:21:36,640
science that kind of thing

605
00:21:41,270 --> 00:21:38,880
and then be a role model yourself for

606
00:21:42,710 --> 00:21:41,280
future generations of women innovators

607
00:21:44,470 --> 00:21:42,720
and i say that

608
00:21:46,390 --> 00:21:44,480
and one of the things i've been struck

609
00:21:47,990 --> 00:21:46,400
by are these articles about the facebook

610
00:21:49,430 --> 00:21:48,000
ipo i don't know if you're all reading

611
00:21:51,029 --> 00:21:49,440
it but there is you know a great article

612
00:21:53,590 --> 00:21:51,039
about charles sandberg

613
00:21:55,110 --> 00:21:53,600

who i guess if the ipo goes as they

614

00:21:57,190 --> 00:21:55,120

think it's going to go is going to be

615

00:21:59,029 --> 00:21:57,200

the richest um

616

00:22:00,950 --> 00:21:59,039

you know entrepreneurial woman in this

617

00:22:02,710 --> 00:22:00,960

country but one of the interesting

618

00:22:03,590 --> 00:22:02,720

things to me she's from the bay area

619

00:22:06,630 --> 00:22:03,600

which is

620

00:22:08,870 --> 00:22:06,640

i'm from a lot of articles about her

621

00:22:10,789 --> 00:22:08,880

over the years and more recently are

622

00:22:13,669 --> 00:22:10,799

about these series of dinners that she's

623

00:22:16,070 --> 00:22:13,679

been having for close to 10 years where

624

00:22:17,830 --> 00:22:16,080

she's just had a responsibility that she

625

00:22:20,710 --> 00:22:17,840

took upon herself to just gather

626

00:22:22,470 --> 00:22:20,720

together younger women and women from

627

00:22:24,549 --> 00:22:22,480

different disciplines and i just think

628

00:22:26,390 --> 00:22:24,559

that's a pretty cool thing that each of

629

00:22:29,510 --> 00:22:26,400

us can do something

630

00:22:32,149 --> 00:22:29,520

and even now our our nation's richest

631

00:22:34,070 --> 00:22:32,159

entrepreneur if the ifeo goes through

632

00:22:36,310 --> 00:22:34,080

you know is uh standing up being

633

00:22:37,590 --> 00:22:36,320

intentional and so all of us can do that

634

00:22:39,430 --> 00:22:37,600

as well

635

00:22:40,470 --> 00:22:39,440

so that's all the comments i was to make

636

00:22:42,070 --> 00:22:40,480

and

637

00:22:56,230 --> 00:22:42,080

open to questions thank you very much

638

00:23:00,870 --> 00:22:57,750

so what we're going to do because we

639

00:23:02,789 --> 00:23:00,880

have a great opportunity here is um i'm

640

00:23:04,870 --> 00:23:02,799

going to welcome nasa administrator

641

00:23:06,950 --> 00:23:04,880

charlie bolden to give some remarks and

642

00:23:09,029 --> 00:23:06,960

then we're going to take questions for

643

00:23:11,110 --> 00:23:09,039

pat and charlie

644

00:23:13,029 --> 00:23:11,120

and i'm going to be donahue and run out

645

00:23:15,669 --> 00:23:13,039

you know and get questions from you all

646

00:23:19,110 --> 00:23:15,679

so think of fabulous questions now

647

00:23:20,470 --> 00:23:19,120

and let me introduce nasa administrator

648

00:23:24,390 --> 00:23:20,480

charlie bolden

649

00:23:30,149 --> 00:23:27,669

come on up charlie he's a

650

00:23:33,669 --> 00:23:30,159

four-time flown astronaut

651
00:23:35,270 --> 00:23:33,679
and was uh confirmed was nominated by

652
00:23:38,470 --> 00:23:35,280
the president and then confirmed by the

653
00:23:39,990 --> 00:23:38,480
senate in july 2009 to become the head

654
00:23:44,070 --> 00:23:40,000
of nasa

655
00:23:46,149 --> 00:23:44,080
nasa has 18 000 employees and as you

656
00:23:47,430 --> 00:23:46,159
heard this morning 6 000 of them are

657
00:23:51,350 --> 00:23:47,440
women

658
00:23:54,149 --> 00:23:51,360
uh and uh charlie's the head of them

659
00:23:57,909 --> 00:23:54,159
and uh he knows a lot of women

660
00:23:59,990 --> 00:23:57,919
and uh he's an inspiration to us all and

661
00:24:01,669 --> 00:24:00,000
uh so i'm going to introduce charlie

662
00:24:02,950 --> 00:24:01,679
thank you thank you thanks very much

663
00:24:05,269 --> 00:24:02,960

thank you

664

00:24:07,269 --> 00:24:05,279

um

665

00:24:09,190 --> 00:24:07,279

thank you dr falcone for your inspiring

666

00:24:10,789 --> 00:24:09,200

remarks and um

667

00:24:13,190 --> 00:24:10,799

i want to thank you for your service to

668

00:24:15,029 --> 00:24:13,200

the nation also i you have done an

669

00:24:16,789 --> 00:24:15,039

incredible job i had an opportunity to

670

00:24:19,029 --> 00:24:16,799

talk with her a little bit back in the

671

00:24:21,990 --> 00:24:19,039

back and and learn a teeny bit

672

00:24:23,269 --> 00:24:22,000

um i can't think of a more important use

673

00:24:24,870 --> 00:24:23,279

of stem

674

00:24:25,990 --> 00:24:24,880

education than in the job that you're

675

00:24:27,029 --> 00:24:26,000

doing pat

676

00:24:29,110 --> 00:24:27,039

and

677

00:24:31,510 --> 00:24:29,120

i think to ensure america's national

678

00:24:33,350 --> 00:24:31,520

security

679

00:24:34,789 --> 00:24:33,360

dr falcone mentioned something i hope

680

00:24:36,310 --> 00:24:34,799

you all heard it

681

00:24:37,590 --> 00:24:36,320

when she talked about her education at

682

00:24:40,549 --> 00:24:37,600

princeton

683

00:24:42,870 --> 00:24:40,559

but i want to emphasize it again she

684

00:24:45,430 --> 00:24:42,880

in 1974 she became the first woman to

685

00:24:48,070 --> 00:24:45,440

get a degree in engineering at princeton

686

00:24:49,909 --> 00:24:48,080

which i think is quite a feat

687

00:24:51,990 --> 00:24:49,919

i am also told that she went on to

688

00:24:56,070 --> 00:24:52,000

become the third only the third woman to

689

00:25:01,430 --> 00:24:58,390

she says she managed

690

00:25:03,510 --> 00:25:01,440

but a phd in engineering also so uh dr

691

00:25:05,190 --> 00:25:03,520

falcone is both a trailblazer and a role

692

00:25:06,549 --> 00:25:05,200

model for all of us

693

00:25:09,350 --> 00:25:06,559

i want to thank all of you for coming

694

00:25:11,269 --> 00:25:09,360

today nasa was

695

00:25:14,470 --> 00:25:11,279

it was a special treat for us to be able

696

00:25:16,230 --> 00:25:14,480

to to sponsor this event and i hope all

697

00:25:17,269 --> 00:25:16,240

of you have had a good time have enjoyed

698

00:25:19,350 --> 00:25:17,279

yourselves

699

00:25:20,549 --> 00:25:19,360

but have uh have gotten something from

700

00:25:23,269 --> 00:25:20,559

this day

701
00:25:24,870 --> 00:25:23,279
and i want to you are here if you if you

702
00:25:27,190 --> 00:25:24,880
didn't have a commitment or an interest

703
00:25:29,909 --> 00:25:27,200
in stem i don't think you would be here

704
00:25:32,070 --> 00:25:29,919
so i i applaud you and i thank you for

705
00:25:34,390 --> 00:25:32,080
your commitment to stem education and to

706
00:25:36,149 --> 00:25:34,400
innovation in the aerospace field

707
00:25:38,390 --> 00:25:36,159
i also want to take a moment to thank

708
00:25:41,590 --> 00:25:38,400
the organizers of this event

709
00:25:44,310 --> 00:25:41,600
our host the gw space policy institute

710
00:25:46,149 --> 00:25:44,320
and our team from nasa beginning with

711
00:25:49,269 --> 00:25:46,159
deputy administrator lori garver who

712
00:25:50,870 --> 00:25:49,279
spoke with you all earlier this morning

713
00:25:52,470 --> 00:25:50,880

in opening the conference and i also

714

00:25:54,630 --> 00:25:52,480

want to thank nasa assistant deputy

715

00:25:56,789 --> 00:25:54,640

administrator for policy and strategy

716

00:25:59,909 --> 00:25:56,799

rebecca spike and

717

00:26:01,830 --> 00:25:59,919

rebecca spike kaiser

718

00:26:04,789 --> 00:26:01,840

that's right

719

00:26:06,950 --> 00:26:04,799

who is an incredible uh mother and

720

00:26:09,350 --> 00:26:06,960

everything and we have a good time

721

00:26:10,870 --> 00:26:09,360

because rebecca can come in sometime and

722

00:26:12,230 --> 00:26:10,880

you know there was a kid who was sick

723

00:26:13,909 --> 00:26:12,240

and you have to figure out okay how do i

724

00:26:16,789 --> 00:26:13,919

get to work and do all this stuff and

725

00:26:18,950 --> 00:26:16,799

it's incredible to watch her balance

726

00:26:20,630 --> 00:26:18,960

you talk about life work balance

727

00:26:22,230 --> 00:26:20,640

my encouragement to all of you because i

728

00:26:24,390 --> 00:26:22,240

have a daughter who is

729

00:26:26,070 --> 00:26:24,400

i don't know she's

730

00:26:29,110 --> 00:26:26,080

she's unmarried

731

00:26:30,149 --> 00:26:29,120

and uh and and i will say

732

00:26:32,470 --> 00:26:30,159

uh

733

00:26:34,870 --> 00:26:32,480

pat i'm not sure how at what stage of

734

00:26:36,789 --> 00:26:34,880

your life you got married but she did

735

00:26:39,029 --> 00:26:36,799

say something that that struck me and

736

00:26:40,549 --> 00:26:39,039

it's you know you have to be intentional

737

00:26:43,269 --> 00:26:40,559

and you have to decide that you are

738

00:26:45,029 --> 00:26:43,279

going to have a balanced life you want

739

00:26:48,230 --> 00:26:45,039

to have a family and you want to be a

740

00:26:49,110 --> 00:26:48,240

professional and you can do it and and

741

00:26:53,110 --> 00:26:49,120

my

742

00:26:54,950 --> 00:26:53,120

if you put it off

743

00:26:55,909 --> 00:26:54,960

until you establish yourself in your

744

00:26:58,710 --> 00:26:55,919

career

745

00:27:00,230 --> 00:26:58,720

uh you run the risk of falling in love

746

00:27:02,470 --> 00:27:00,240

with your profession

747

00:27:04,310 --> 00:27:02,480

uh which is fine

748

00:27:06,789 --> 00:27:04,320

but i would just i would just offer that

749

00:27:08,470 --> 00:27:06,799

and i i i talk about rebecca all the

750

00:27:10,470 --> 00:27:08,480

time because i think she made a decision

751
00:27:12,149 --> 00:27:10,480
early in her life that she wanted to be

752
00:27:13,830 --> 00:27:12,159
both a mother and a professional and has

753
00:27:14,870 --> 00:27:13,840
done it incredibly well as i think pat

754
00:27:17,510 --> 00:27:14,880
has so

755
00:27:18,389 --> 00:27:17,520
just food for thought if you will

756
00:27:20,549 --> 00:27:18,399
um

757
00:27:22,470 --> 00:27:20,559
i also want to thank

758
00:27:23,750 --> 00:27:22,480
white house fellow deborah kershan who

759
00:27:25,830 --> 00:27:23,760
is um

760
00:27:28,389 --> 00:27:25,840
i am privileged to have working with me

761
00:27:31,190 --> 00:27:28,399
for this year uh she is an incredible

762
00:27:33,029 --> 00:27:31,200
woman in her own right and uh and then i

763
00:27:34,470 --> 00:27:33,039

want to thank the entire women at nasa

764

00:27:35,990 --> 00:27:34,480

website team

765

00:27:37,830 --> 00:27:36,000

i want to encourage all of you as i

766

00:27:39,950 --> 00:27:37,840

think you have been as has been done all

767

00:27:41,510 --> 00:27:39,960

day long to go to women

768

00:27:43,669 --> 00:27:41,520

women.nasa.gov

769

00:27:45,669 --> 00:27:43,679

to view the testimonials of 32

770

00:27:47,830 --> 00:27:45,679

extraordinary nasal women

771

00:27:50,070 --> 00:27:47,840

from scientists and engineers to policy

772

00:27:52,149 --> 00:27:50,080

analysts and managers

773

00:27:54,310 --> 00:27:52,159

these women are essential to our vision

774

00:27:56,470 --> 00:27:54,320

of reaching new heights and revealing

775

00:27:58,549 --> 00:27:56,480

the unknown so that what we do and learn

776

00:28:00,310 --> 00:27:58,559

benefit all humankind

777

00:28:02,950 --> 00:28:00,320

we're fortunate to have five of the

778

00:28:05,590 --> 00:28:02,960

women who appear on the new women at

779

00:28:08,389 --> 00:28:05,600

nasa website with us this afternoon

780

00:28:10,870 --> 00:28:08,399

i'm going to embarrass them i hope not

781

00:28:12,870 --> 00:28:10,880

to be quite honest but i am going to to

782

00:28:15,350 --> 00:28:12,880

call their names and ask them if they

783

00:28:17,909 --> 00:28:15,360

would stand in case all of you may not

784

00:28:19,590 --> 00:28:17,919

have met them yet uh first of all from

785

00:28:25,029 --> 00:28:19,600

the goddard space flight center charlene

786

00:28:32,870 --> 00:28:27,029

from uh kennedy space center tiffany

787

00:28:39,190 --> 00:28:35,990

darlene boykins and hashima hassan from

788

00:28:44,310 --> 00:28:41,590

and i thank all of you for what you do

789

00:28:50,389 --> 00:28:44,320

and congratulations for being featured

790

00:28:55,110 --> 00:28:52,070

you know you shared your stories of

791

00:28:57,510 --> 00:28:55,120

inspiration and uh i don't think you

792

00:28:58,470 --> 00:28:57,520

will understand the impact of doing so

793

00:29:01,269 --> 00:28:58,480

until you

794

00:29:03,510 --> 00:29:01,279

you meet someone on the street 10 20

795

00:29:06,630 --> 00:29:03,520

years from now and they say you know

796

00:29:09,269 --> 00:29:06,640

i remember when i was an intern or i was

797

00:29:10,389 --> 00:29:09,279

a co-op or i was something at nasa and i

798

00:29:13,430 --> 00:29:10,399

saw you

799

00:29:15,510 --> 00:29:13,440

on women at nasa and i decided then that

800

00:29:18,149 --> 00:29:15,520

i was going to do something uh as

801
00:29:20,630 --> 00:29:18,159
mentors you you are not seeking

802
00:29:22,789 --> 00:29:20,640
instantaneous gratification because it

803
00:29:24,830 --> 00:29:22,799
does not come but it does come at some

804
00:29:27,510 --> 00:29:24,840
time in your life

805
00:29:29,350 --> 00:29:27,520
um you know i have a slightly different

806
00:29:30,310 --> 00:29:29,360
view of women's history month than some

807
00:29:32,549 --> 00:29:30,320
people

808
00:29:34,230 --> 00:29:32,559
um there's never been a month or a

809
00:29:36,470 --> 00:29:34,240
moment in my life

810
00:29:39,110 --> 00:29:36,480
where i question the indispensable power

811
00:29:41,029 --> 00:29:39,120
potential and contributions of women

812
00:29:42,470 --> 00:29:41,039
maybe that stems from the example of my

813
00:29:44,630 --> 00:29:42,480

own mother

814

00:29:46,470 --> 00:29:44,640

who taught me at an early age that

815

00:29:49,269 --> 00:29:46,480

regardless of race

816

00:29:51,750 --> 00:29:49,279

gender background or income

817

00:29:54,470 --> 00:29:51,760

there was nothing i couldn't do

818

00:29:57,190 --> 00:29:54,480

my mother was a teacher and a librarian

819

00:29:59,190 --> 00:29:57,200

but at heart she was an explorer

820

00:30:00,149 --> 00:29:59,200

her field of exploration was not deep

821

00:30:01,669 --> 00:30:00,159

space

822

00:30:04,310 --> 00:30:01,679

but education

823

00:30:05,269 --> 00:30:04,320

her vehicles were literature history and

824

00:30:07,750 --> 00:30:05,279

reading

825

00:30:10,230 --> 00:30:07,760

and her destination was the untapped

826

00:30:12,149 --> 00:30:10,240

potential of an empowerment of young

827

00:30:13,269 --> 00:30:12,159

girls and boys who she believed could

828

00:30:15,510 --> 00:30:13,279

succeed

829

00:30:17,669 --> 00:30:15,520

despite the obstacles of discrimination

830

00:30:20,310 --> 00:30:17,679

and poverty that were so prevalent in

831

00:30:21,110 --> 00:30:20,320

the south carolina of her time

832

00:30:23,909 --> 00:30:21,120

so

833

00:30:25,830 --> 00:30:23,919

i grew up knowing the power of women

834

00:30:27,029 --> 00:30:25,840

i'm blessed to be married to a strong

835

00:30:29,590 --> 00:30:27,039

black woman

836

00:30:31,190 --> 00:30:29,600

alexis jackie bolden

837

00:30:33,510 --> 00:30:31,200

who i have known since we were the age

838

00:30:34,830 --> 00:30:33,520

of three

839

00:30:38,070 --> 00:30:34,840

that's

840

00:30:39,830 --> 00:30:38,080

right there is a story told i can't

841

00:30:41,909 --> 00:30:39,840

verify it because my father is looking

842

00:30:44,710 --> 00:30:41,919

down on us from heaven now but that

843

00:30:47,269 --> 00:30:44,720

our two families uh were at the beach

844

00:30:49,110 --> 00:30:47,279

and uh

845

00:30:50,630 --> 00:30:49,120

jackie denies this but i'm told she was

846

00:30:52,950 --> 00:30:50,640

bowlegged

847

00:30:55,029 --> 00:30:52,960

and that my father looked at

848

00:30:57,509 --> 00:30:55,039

her father and said save the bowlegged

849

00:31:00,230 --> 00:30:57,519

one for charles

850

00:31:01,830 --> 00:31:00,240

and that was how our relationship began

851
00:31:02,870 --> 00:31:01,840
when we were three i see you shaking

852
00:31:04,870 --> 00:31:02,880
your head

853
00:31:07,509 --> 00:31:04,880
my wife denies that also

854
00:31:09,430 --> 00:31:07,519
but she's not here so i can tell it

855
00:31:11,269 --> 00:31:09,440
uh we're blessed with an incredible

856
00:31:12,549 --> 00:31:11,279
daughter we have a son but i'm not going

857
00:31:13,669 --> 00:31:12,559
to talk about him today he's a

858
00:31:15,669 --> 00:31:13,679
lieutenant colonel in the marine corps

859
00:31:17,509 --> 00:31:15,679
at the pentagon but we're blessed with

860
00:31:19,190 --> 00:31:17,519
an incredible daughter dr kelly bolden

861
00:31:21,430 --> 00:31:19,200
who is a medical doctor and a plastic

862
00:31:23,269 --> 00:31:21,440
surgeon at providence hospital here in

863
00:31:24,950 --> 00:31:23,279

the district of columbia a question was

864

00:31:26,789 --> 00:31:24,960

asked in the last session

865

00:31:28,950 --> 00:31:26,799

i want to go into medicine but i also

866

00:31:30,549 --> 00:31:28,960

want to be an engineer or i want to get

867

00:31:32,470 --> 00:31:30,559

into engineering

868

00:31:35,430 --> 00:31:32,480

kelly always knew she wanted to be a

869

00:31:37,029 --> 00:31:35,440

doctor but she also didn't know whether

870

00:31:38,950 --> 00:31:37,039

she was going to be successful in

871

00:31:41,269 --> 00:31:38,960

getting in med school always had an

872

00:31:43,669 --> 00:31:41,279

interest in stem-related areas and so

873

00:31:46,149 --> 00:31:43,679

she decided that

874

00:31:48,310 --> 00:31:46,159

don't ask me why she decided this that

875

00:31:50,549 --> 00:31:48,320

as a safety net

876

00:31:52,470 --> 00:31:50,559

she would do a dual degree in an

877

00:31:54,950 --> 00:31:52,480

undergraduate so she majored in

878

00:31:56,710 --> 00:31:54,960

chemistry at spelman college in atlanta

879

00:31:57,909 --> 00:31:56,720

and then went for two more years to

880

00:32:00,230 --> 00:31:57,919

georgia tech

881

00:32:01,509 --> 00:32:00,240

where she earned a dual degree in chemo

882

00:32:03,269 --> 00:32:01,519

chemistry and chemical engineering

883

00:32:05,909 --> 00:32:03,279

before going to medical school at baylor

884

00:32:08,310 --> 00:32:05,919

so if you're focused and you know what

885

00:32:10,710 --> 00:32:08,320

you want to do you can do anything that

886

00:32:13,509 --> 00:32:10,720

you set your mind to

887

00:32:14,870 --> 00:32:13,519

um you know finally my wife and i are

888

00:32:16,870 --> 00:32:14,880

the proud granddaughters of three

889

00:32:19,590 --> 00:32:16,880

beautiful smart energetic granddaughters

890

00:32:20,710 --> 00:32:19,600

mckayley is 11 kyrah is nine talia's

891

00:32:22,950 --> 00:32:20,720

five

892

00:32:23,909 --> 00:32:22,960

mckayley plans to be a rocket scientist

893

00:32:25,750 --> 00:32:23,919

and

894

00:32:30,230 --> 00:32:25,760

i

895

00:32:31,830 --> 00:32:30,240

daughters and several years ago when

896

00:32:33,990 --> 00:32:31,840

they were going to come to visit us when

897

00:32:35,990 --> 00:32:34,000

we were living in houston from san diego

898

00:32:36,870 --> 00:32:36,000

mckayla called and they call me oji

899

00:32:38,710 --> 00:32:36,880

which is

900

00:32:40,870 --> 00:32:38,720

we live two years in japan and og is

901
00:32:43,430 --> 00:32:40,880
short for ogisan which is grandfather in

902
00:32:45,269 --> 00:32:43,440
japanese and so mckayley called she said

903
00:32:46,950 --> 00:32:45,279
oh gee i know what i want for christmas

904
00:32:47,990 --> 00:32:46,960
i said mckealy what do you want for

905
00:32:49,430 --> 00:32:48,000
christmas

906
00:32:51,669 --> 00:32:49,440
she said i want to meet a rocket

907
00:32:53,909 --> 00:32:51,679
scientist so i can ask questions you

908
00:32:56,230 --> 00:32:53,919
know we were living in houston the home

909
00:32:58,149 --> 00:32:56,240
of the johnson space center and so i

910
00:32:59,190 --> 00:32:58,159
said makayla i think we can arrange that

911
00:33:05,509 --> 00:32:59,200
and

912
00:33:06,950 --> 00:33:05,519
the good thing was one of my down the

913
00:33:08,389 --> 00:33:06,960

street neighbors was a gentleman by the

914

00:33:10,789 --> 00:33:08,399

name of bo bemik

915

00:33:13,269 --> 00:33:10,799

who is some of you who are jsc nobo bo

916

00:33:15,350 --> 00:33:13,279

is uh beau is a rocket scientist

917

00:33:17,110 --> 00:33:15,360

and uh and an incredible rocket

918

00:33:18,950 --> 00:33:17,120

scientist and i i

919

00:33:21,110 --> 00:33:18,960

i'd see beau on the street all the time

920

00:33:23,190 --> 00:33:21,120

i was retired at the time i thought not

921

00:33:24,870 --> 00:33:23,200

doing very well retired i was being

922

00:33:26,950 --> 00:33:24,880

unsuccessful at it

923

00:33:28,230 --> 00:33:26,960

and i said bo i have a i have my

924

00:33:29,830 --> 00:33:28,240

granddaughters coming and one of them

925

00:33:31,990 --> 00:33:29,840

wants to be a rocket scientist and her

926
00:33:33,430 --> 00:33:32,000
only request for christmas is to meet a

927
00:33:35,269 --> 00:33:33,440
rocket scientist would you say hello to

928
00:33:37,990 --> 00:33:35,279
her he said yeah bring her down

929
00:33:39,590 --> 00:33:38,000
and so i took her down to bo's house i

930
00:33:40,870 --> 00:33:39,600
had told her about it and she wanted to

931
00:33:42,870 --> 00:33:40,880
know she said oh gee can i make a

932
00:33:43,990 --> 00:33:42,880
powerpoint presentation

933
00:33:45,669 --> 00:33:44,000
i said

934
00:33:47,190 --> 00:33:45,679
no michael

935
00:33:49,029 --> 00:33:47,200
you you know you're just going down to

936
00:33:52,389 --> 00:33:49,039
meet him and you want to listen you

937
00:33:54,710 --> 00:33:52,399
don't you don't need to sell him on you

938
00:33:56,630 --> 00:33:54,720

so when they came and we got ready to

939

00:33:58,549 --> 00:33:56,640

walk up the street i noticed she had

940

00:33:59,909 --> 00:33:58,559

sort of a folder in her hand much like i

941

00:34:01,509 --> 00:33:59,919

had and i said mckeely what's in your

942

00:34:03,590 --> 00:34:01,519

folder she said well you told me i

943

00:34:06,470 --> 00:34:03,600

couldn't do a powerpoint display but i i

944

00:34:07,590 --> 00:34:06,480

did a diagram of my rocket

945

00:34:09,349 --> 00:34:07,600

and so i thought it was going to be a

946

00:34:11,430 --> 00:34:09,359

piece of paper like this with a rocket

947

00:34:12,869 --> 00:34:11,440

we get down to bows and bo invited us in

948

00:34:14,230 --> 00:34:12,879

and we went in the kitchen

949

00:34:15,990 --> 00:34:14,240

and we're sitting around the kitchen

950

00:34:18,869 --> 00:34:16,000

table and michaela opens up her notebook

951
00:34:21,430 --> 00:34:18,879
and she pulls out nine sheets of paper

952
00:34:23,589 --> 00:34:21,440
and she has taken her rocket design and

953
00:34:26,389 --> 00:34:23,599
she has drawn it on these nine pieces of

954
00:34:29,030 --> 00:34:26,399
paper so we have this huge

955
00:34:31,030 --> 00:34:29,040
diagram of a rocket that she has

956
00:34:32,790 --> 00:34:31,040
on the ground and she and bo

957
00:34:34,470 --> 00:34:32,800
sat around that kitchen table bo went

958
00:34:36,389 --> 00:34:34,480
and got some of his rocket models and

959
00:34:38,950 --> 00:34:36,399
everything and and for about two hours

960
00:34:41,109 --> 00:34:38,960
they talked about making rockets and why

961
00:34:42,869 --> 00:34:41,119
did she put this part in the design and

962
00:34:45,190 --> 00:34:42,879
why did she put that part in the design

963
00:34:47,510 --> 00:34:45,200

and she could explain what it was you

964

00:34:50,149 --> 00:34:47,520

know why why she had this she had a net

965

00:34:51,750 --> 00:34:50,159

that was a debris shield and all other

966

00:34:53,430 --> 00:34:51,760

kinds of stuff so

967

00:34:56,230 --> 00:34:53,440

it is important

968

00:34:58,310 --> 00:34:56,240

for all of us me as a grandfather to be

969

00:34:59,670 --> 00:34:58,320

a role model to my granddaughters and to

970

00:35:02,390 --> 00:34:59,680

my daughter

971

00:35:04,470 --> 00:35:02,400

so that they know that people do

972

00:35:06,630 --> 00:35:04,480

believe in them and that they can do

973

00:35:08,790 --> 00:35:06,640

anything that they want to do

974

00:35:10,470 --> 00:35:08,800

as a bit of a history buff i am also

975

00:35:12,470 --> 00:35:10,480

aware that there are some outstanding

976

00:35:15,190 --> 00:35:12,480

scientists and mathematicians

977

00:35:18,390 --> 00:35:15,200

throughout history who are women

978

00:35:20,150 --> 00:35:18,400

hypatia of alexandria in 400 a.d became

979

00:35:21,510 --> 00:35:20,160

the head of the platonist school of

980

00:35:23,349 --> 00:35:21,520

alexandria

981

00:35:25,430 --> 00:35:23,359

during her life she discouraged

982

00:35:27,510 --> 00:35:25,440

mysticism and encouraged logical and

983

00:35:28,870 --> 00:35:27,520

mathematical studies

984

00:35:33,589 --> 00:35:28,880

emil

985

00:35:34,950 --> 00:35:33,599

chatelain who lived from 1706 to 1749

986

00:35:36,870 --> 00:35:34,960

she was a french physicist and

987

00:35:39,670 --> 00:35:36,880

mathematician who translated newton's

988

00:35:43,349 --> 00:35:39,680

principia into french she distinguished

989

00:35:44,550 --> 00:35:43,359

herself as a as a she disguised herself

990

00:35:46,710 --> 00:35:44,560

as a man

991

00:35:49,030 --> 00:35:46,720

in order to study science

992

00:35:51,430 --> 00:35:49,040

maria mitchell who lived from 1818 to

993

00:35:53,589 --> 00:35:51,440

1889 was the first professional woman

994

00:35:55,270 --> 00:35:53,599

astronomer in the united states and the

995

00:35:58,030 --> 00:35:55,280

first woman to gain membership in the

996

00:35:59,670 --> 00:35:58,040

american academy of arts and sciences in

997

00:36:02,230 --> 00:35:59,680

1848

998

00:36:04,710 --> 00:36:02,240

she once said i quote we especially need

999

00:36:06,470 --> 00:36:04,720

imagination in science question

1000

00:36:08,310 --> 00:36:06,480

everything unquote

1001

00:36:11,990 --> 00:36:08,320

she was so right

1002

00:36:13,910 --> 00:36:12,000

i will paraphrase as saying it's really

1003

00:36:15,750 --> 00:36:13,920

necessity as the mother of invention but

1004

00:36:17,030 --> 00:36:15,760

i will say innovation

1005

00:36:23,030 --> 00:36:17,040

is the mother

1006

00:36:25,430 --> 00:36:23,040

and innovation is what we do at nasa and

1007

00:36:27,589 --> 00:36:25,440

throughout the aerospace industry

1008

00:36:29,589 --> 00:36:27,599

i am proud of the contributions women

1009

00:36:31,190 --> 00:36:29,599

have made and continue to make at nasa

1010

00:36:33,109 --> 00:36:31,200

at every level

1011

00:36:35,589 --> 00:36:33,119

we are determined to keep that pipeline

1012

00:36:38,150 --> 00:36:35,599

flowing through recruitment support and

1013

00:36:39,349 --> 00:36:38,160

promotions as well as our investments in

1014

00:36:41,510 --> 00:36:39,359

stem

1015

00:36:43,829 --> 00:36:41,520

america needs you

1016

00:36:46,230 --> 00:36:43,839

aerospace needs you

1017

00:36:48,470 --> 00:36:46,240

we at nasa need you

1018

00:36:51,030 --> 00:36:48,480

the good news as we learned from the new

1019

00:36:54,230 --> 00:36:51,040

girl scout study is that an overwhelming

1020

00:36:55,750 --> 00:36:54,240

majority 74 percent of high school girls

1021

00:36:58,230 --> 00:36:55,760

across the country

1022

00:36:59,910 --> 00:36:58,240

are interested in stem studies

1023

00:37:01,910 --> 00:36:59,920

we just have to do a better job of

1024

00:37:04,230 --> 00:37:01,920

breaking down those old barriers and

1025

00:37:06,310 --> 00:37:04,240

unleashing their potential

1026
00:37:07,670 --> 00:37:06,320
look out at this room if you would just

1027
00:37:10,470 --> 00:37:07,680
look around

1028
00:37:11,750 --> 00:37:10,480
a room full of eager students and young

1029
00:37:13,510 --> 00:37:11,760
professionals

1030
00:37:15,910 --> 00:37:13,520
i have no doubt

1031
00:37:17,829 --> 00:37:15,920
that you're the ones who will lead us to

1032
00:37:19,829 --> 00:37:17,839
a better tomorrow i thank you for this

1033
00:37:22,069 --> 00:37:19,839
opportunity to participate in this forum

1034
00:37:24,069 --> 00:37:22,079
and i thank you for participating today

1035
00:37:26,150 --> 00:37:24,079
and pat if you want to come back up i

1036
00:37:36,310 --> 00:37:26,160
think we do we may have some time to try

1037
00:37:53,430 --> 00:37:37,670
all right

1038
00:37:57,030 --> 00:37:55,750

right there rebecca on the aisle almost

1039

00:37:58,630 --> 00:37:57,040

in the back

1040

00:38:00,550 --> 00:37:58,640

yeah

1041

00:38:02,710 --> 00:38:00,560

it's easier for us to see

1042

00:38:06,470 --> 00:38:02,720

okay people could come up here too

1043

00:38:10,870 --> 00:38:08,710

good afternoon i'm lois tett with

1044

00:38:12,710 --> 00:38:10,880

majority and women-owned businesses and

1045

00:38:15,270 --> 00:38:12,720

we followed nasa for the longest in

1046

00:38:17,270 --> 00:38:15,280

terms of small business contracts and at

1047

00:38:20,550 --> 00:38:17,280

one point we were told that there would

1048

00:38:23,030 --> 00:38:20,560

be an explosion of low earth technology

1049

00:38:26,069 --> 00:38:23,040

as you see that's clearly come to pass

1050

00:38:27,430 --> 00:38:26,079

they also said that at least 60 or over

1051
00:38:30,150 --> 00:38:27,440
60 percent

1052
00:38:33,190 --> 00:38:30,160
of the positions that are filled at nasa

1053
00:38:35,349 --> 00:38:33,200
are from contractors is that true

1054
00:38:38,390 --> 00:38:35,359
can you say just the last part of the

1055
00:38:43,109 --> 00:38:38,400
question 60 over 60

1056
00:38:44,950 --> 00:38:43,119
of the jobs at nasa are contractors 85

1057
00:38:49,190 --> 00:38:44,960
of the funds that are in the nasa but i

1058
00:38:52,550 --> 00:38:49,200
have a 17.7 billion dollar budget and 87

1059
00:38:56,310 --> 00:38:52,560
85 percent of of those funds go uh to

1060
00:39:00,390 --> 00:38:56,320
the outside so we have about 40 000

1061
00:39:03,030 --> 00:39:00,400
uh contractors uh who support our

1062
00:39:05,270 --> 00:39:03,040
17 18 000 civil servants so the vast

1063
00:39:07,990 --> 00:39:05,280

majority of people who work nasa

1064

00:39:09,190 --> 00:39:08,000

programs are nasa contractors or private

1065

00:39:10,630 --> 00:39:09,200

industry

1066

00:39:13,109 --> 00:39:10,640

and i tell people that all the time when

1067

00:39:15,109 --> 00:39:13,119

we talk about building rockets and

1068

00:39:17,430 --> 00:39:15,119

people who are nervous about our our

1069

00:39:19,030 --> 00:39:17,440

effort to enter into

1070

00:39:21,349 --> 00:39:19,040

an era where we have commercial

1071

00:39:22,950 --> 00:39:21,359

companies private companies providing

1072

00:39:26,470 --> 00:39:22,960

transportation for astronauts to and

1073

00:39:29,430 --> 00:39:26,480

from space uh it's not new uh the the

1074

00:39:30,390 --> 00:39:29,440

concept of having them be responsible

1075

00:39:33,430 --> 00:39:30,400

and us

1076

00:39:35,349 --> 00:39:33,440

rent or lease the service is new but um

1077

00:39:37,750 --> 00:39:35,359

from the earliest days of mercury

1078

00:39:39,750 --> 00:39:37,760

germany apollo it was always an american

1079

00:39:42,310 --> 00:39:39,760

aerospace company working hand in glove

1080

00:39:43,910 --> 00:39:42,320

with nasa that that built the the

1081

00:39:46,790 --> 00:39:43,920

machines for us

1082

00:39:47,829 --> 00:39:46,800

so it's more than 60 percent

1083

00:39:49,349 --> 00:39:47,839

okay

1084

00:39:53,190 --> 00:39:49,359

a question down there ruth will get your

1085

00:39:57,430 --> 00:39:55,670

hi so this question is mostly for for

1086

00:39:59,190 --> 00:39:57,440

you dr falcone i'm

1087

00:40:01,430 --> 00:39:59,200

i'm very interested in getting into

1088

00:40:03,910 --> 00:40:01,440

public policy related to stem but

1089

00:40:06,309 --> 00:40:03,920

specifically stem education

1090

00:40:09,510 --> 00:40:06,319

after i have my ph.d is that something

1091

00:40:12,470 --> 00:40:09,520

that ostp is involved in public policy

1092

00:40:14,550 --> 00:40:12,480

for stem education or where would you

1093

00:40:16,870 --> 00:40:14,560

recommend me looking for opportunities

1094

00:40:19,510 --> 00:40:16,880

in that area

1095

00:40:23,750 --> 00:40:19,520

well ostp has just led

1096

00:40:24,950 --> 00:40:23,760

an inventory of all of the federal stem

1097

00:40:27,589 --> 00:40:24,960

programs

1098

00:40:30,390 --> 00:40:27,599

and submitted that and is you know to

1099

00:40:32,150 --> 00:40:30,400

congress actually for discussion so ostp

1100

00:40:33,589 --> 00:40:32,160

is involved at the coordination level

1101

00:40:36,150 --> 00:40:33,599

but the actual

1102

00:40:37,990 --> 00:40:36,160

development of specific stem programs

1103

00:40:40,470 --> 00:40:38,000

goes on in departments and agencies and

1104

00:40:43,430 --> 00:40:40,480

certainly nasa has a huge set of

1105

00:40:44,630 --> 00:40:43,440

activities so the real doing of

1106

00:40:46,630 --> 00:40:44,640

you know

1107

00:40:49,109 --> 00:40:46,640

policy and making it work does happen in

1108

00:40:50,550 --> 00:40:49,119

a variety all the science agencies have

1109

00:40:53,109 --> 00:40:50,560

a role and of course the department of

1110

00:40:59,270 --> 00:40:53,119

education has a role so i'd look and the

1111

00:41:02,950 --> 00:41:01,190

hi my name is megan roulard i work with

1112

00:41:05,109 --> 00:41:02,960

the larouche political action committee

1113

00:41:07,270 --> 00:41:05,119

for our science research team

1114

00:41:09,030 --> 00:41:07,280

i i wanted to raise it does seem that

1115

00:41:11,349 --> 00:41:09,040

there are some real

1116

00:41:14,150 --> 00:41:11,359

strategic and economic considerations

1117

00:41:16,630 --> 00:41:14,160

which are determining a lot about what's

1118

00:41:19,990 --> 00:41:16,640

possible for women and others

1119

00:41:22,790 --> 00:41:20,000

in terms of innovation and a real uh

1120

00:41:24,230 --> 00:41:22,800

frontier policy at nasa and in

1121

00:41:26,309 --> 00:41:24,240

in aerospace

1122

00:41:28,309 --> 00:41:26,319

i recently watched a hearing

1123

00:41:30,550 --> 00:41:28,319

congressional hearing on the

1124

00:41:33,910 --> 00:41:30,560

web telescope and

1125

00:41:36,150 --> 00:41:33,920

various panelists from nasa were asked

1126

00:41:37,589 --> 00:41:36,160

by congressman because of the you know

1127

00:41:40,069 --> 00:41:37,599

budget cut requirements from the

1128

00:41:42,230 --> 00:41:40,079

administration do you want a new heavy

1129

00:41:43,990 --> 00:41:42,240

launch vehicle or do you want the web

1130

00:41:45,430 --> 00:41:44,000

telescope

1131

00:41:47,109 --> 00:41:45,440

you know nobody

1132

00:41:48,550 --> 00:41:47,119

really answered either way on this one

1133

00:41:49,430 --> 00:41:48,560

but that's typical of the state of

1134

00:41:51,190 --> 00:41:49,440

things

1135

00:41:53,030 --> 00:41:51,200

we also under the administration have

1136

00:41:55,349 --> 00:41:53,040

required the current

1137

00:41:57,109 --> 00:41:55,359

uh you know the space shuttle dependent

1138

00:41:59,349 --> 00:41:57,119

on other countries to get back up to the

1139

00:42:01,109 --> 00:41:59,359

space station including russia

1140

00:42:03,510 --> 00:42:01,119

we generally enter this administration

1141

00:42:05,910 --> 00:42:03,520

have had a very provocative policy

1142

00:42:07,829 --> 00:42:05,920

stance towards them

1143

00:42:08,870 --> 00:42:07,839

so my question is

1144

00:42:11,589 --> 00:42:08,880

uh

1145

00:42:14,710 --> 00:42:11,599

you know what's the real prospect for

1146

00:42:17,430 --> 00:42:14,720

innovation and real creativity at nasa

1147

00:42:18,550 --> 00:42:17,440

for women and otherwise given these very

1148

00:42:21,109 --> 00:42:18,560

real

1149

00:42:23,510 --> 00:42:21,119

strategic and economic considerations

1150

00:42:25,430 --> 00:42:23,520

and the current policy and i'd add you

1151

00:42:27,190 --> 00:42:25,440

know including typical being the

1152

00:42:29,990 --> 00:42:27,200

examples i gave i don't think a

1153

00:42:31,910 --> 00:42:30,000

continuation of the current policy

1154

00:42:34,390 --> 00:42:31,920

bodes well for the future

1155

00:42:35,910 --> 00:42:34,400

well i i wouldn't agree with your with

1156

00:42:38,630 --> 00:42:35,920

your assessment i'm i'm not as

1157

00:42:41,109 --> 00:42:38,640

pessimistic as you as you seem to sound

1158

00:42:43,109 --> 00:42:41,119

uh what was done in 2010 when we were

1159

00:42:46,150 --> 00:42:43,119

working through the budget process was

1160

00:42:48,470 --> 00:42:46,160

the president and the congress and the

1161

00:42:52,150 --> 00:42:48,480

chief players were actually senator kay

1162

00:42:54,470 --> 00:42:52,160

bailey hudson hutchinson senator nelson

1163

00:42:56,630 --> 00:42:54,480

congresswoman johnson and congressman

1164

00:42:59,670 --> 00:42:56,640

hall from the house

1165

00:43:01,750 --> 00:42:59,680

came together and and recognized that we

1166

00:43:04,470 --> 00:43:01,760

needed nasa needed to have

1167

00:43:06,710 --> 00:43:04,480

prior our work prioritized and so the

1168

00:43:08,870 --> 00:43:06,720

agreement between the president and the

1169

00:43:10,550 --> 00:43:08,880

members of congress was that there would

1170

00:43:12,950 --> 00:43:10,560

be three priority

1171

00:43:15,270 --> 00:43:12,960

endeavors for nasa uh the james webb

1172

00:43:18,790 --> 00:43:15,280

space telescope is the the foremost

1173

00:43:21,190 --> 00:43:18,800

scientific undertaking not to to do away

1174

00:43:22,870 --> 00:43:21,200

with other things but as the the the

1175

00:43:24,309 --> 00:43:22,880

hallmark if you will

1176

00:43:25,430 --> 00:43:24,319

um the

1177

00:43:27,430 --> 00:43:25,440

heavy lift launch vehicle and

1178

00:43:30,069 --> 00:43:27,440

multi-purpose crew vehicle as the

1179

00:43:32,550 --> 00:43:30,079

instrument to facilitate an exploration

1180

00:43:34,150 --> 00:43:32,560

program know it recognizing that that

1181

00:43:37,030 --> 00:43:34,160

you can't explore

1182

00:43:39,430 --> 00:43:37,040

until we get new technologies so a a

1183

00:43:41,589 --> 00:43:39,440

space technology program is necessary

1184

00:43:43,990 --> 00:43:41,599

and and we've asked for funding for that

1185

00:43:46,069 --> 00:43:44,000

this year 2012 is the first year that

1186

00:43:48,710 --> 00:43:46,079

nasa actually has a technology space

1187

00:43:51,190 --> 00:43:48,720

technology funding line in our budget uh

1188

00:43:53,349 --> 00:43:51,200

it's 575 million dollars may not sound

1189

00:43:55,990 --> 00:43:53,359

like a lot to you but when it's when it

1190

00:43:58,550 --> 00:43:56,000

was zero last year that's a lot and and

1191

00:44:00,870 --> 00:43:58,560

what we're asking for this year is 699

1192

00:44:04,309 --> 00:44:00,880

million uh and then the third priority

1193

00:44:05,670 --> 00:44:04,319

was um was enhanced utilization of the

1194

00:44:07,829 --> 00:44:05,680

international space station as a

1195

00:44:09,670 --> 00:44:07,839

national laboratory now that we have

1196

00:44:12,630 --> 00:44:09,680

agreed the international partners have

1197

00:44:14,550 --> 00:44:12,640

agreed to extend it to at least 2020 we

1198

00:44:17,750 --> 00:44:14,560

cannot do that without a capability to

1199

00:44:20,150 --> 00:44:17,760

get our crews and and cargo to space and

1200

00:44:22,790 --> 00:44:20,160

so that's where we found the necessity

1201
00:44:24,710 --> 00:44:22,800
of phasing out shuttle because it was

1202
00:44:26,950 --> 00:44:24,720
decided after the columbia accident all

1203
00:44:28,550 --> 00:44:26,960
the way back in 2004

1204
00:44:31,030 --> 00:44:28,560
phasing out shuttle is the as the

1205
00:44:33,430 --> 00:44:31,040
vehicle for transportation and allowing

1206
00:44:34,950 --> 00:44:33,440
american industry to take over that that

1207
00:44:38,230 --> 00:44:34,960
responsibility

1208
00:44:40,230 --> 00:44:38,240
we are well on the way to that um so

1209
00:44:42,069 --> 00:44:40,240
um commercial crew and cargo will

1210
00:44:44,230 --> 00:44:42,079
support the international space station

1211
00:44:45,430 --> 00:44:44,240
those are the three priorities but we

1212
00:44:47,990 --> 00:44:45,440
still have

1213
00:44:51,030 --> 00:44:48,000

what i would say is i don't use the term

1214

00:44:51,990 --> 00:44:51,040

robust but if i were to list for you the

1215

00:44:53,990 --> 00:44:52,000

science

1216

00:44:56,230 --> 00:44:54,000

missions that are either in progress

1217

00:44:57,750 --> 00:44:56,240

right now and there are more than 80. we

1218

00:45:00,230 --> 00:44:57,760

have about 56 of them that are

1219

00:45:02,790 --> 00:45:00,240

operational projects even as we speak

1220

00:45:04,710 --> 00:45:02,800

and about 28 that are in development and

1221

00:45:06,069 --> 00:45:04,720

some will be launched

1222

00:45:08,870 --> 00:45:06,079

later this month

1223

00:45:11,030 --> 00:45:08,880

on into the 2018s when the james webb

1224

00:45:13,990 --> 00:45:11,040

space telescope is so the opportunities

1225

00:45:15,750 --> 00:45:14,000

for women uh for minorities for anyone

1226

00:45:17,510 --> 00:45:15,760

who wants to enter the stem field i

1227

00:45:20,630 --> 00:45:17,520

think are rich

1228

00:45:22,150 --> 00:45:20,640

our problem is going to be

1229

00:45:24,150 --> 00:45:22,160

getting people who are interested in

1230

00:45:25,990 --> 00:45:24,160

stem educating people interested in stem

1231

00:45:28,150 --> 00:45:26,000

education first of all

1232

00:45:29,910 --> 00:45:28,160

getting them into college with the

1233

00:45:32,150 --> 00:45:29,920

courage to take the difficult courses

1234

00:45:33,670 --> 00:45:32,160

that pat kept alluding to so that they

1235

00:45:36,390 --> 00:45:33,680

can get through the undergraduate

1236

00:45:38,550 --> 00:45:36,400

curriculum and then if they want to to

1237

00:45:40,390 --> 00:45:38,560

go on to graduate and postgraduate

1238

00:45:42,550 --> 00:45:40,400

degrees

1239

00:45:46,710 --> 00:45:42,560

thank you we could take one last

1240

00:45:50,950 --> 00:45:48,550

this is your chance

1241

00:45:53,750 --> 00:45:50,960

head of nasa and

1242

00:45:56,790 --> 00:45:53,760

first graduate in engineering from

1243

00:46:01,829 --> 00:45:59,349

hi um from a policy standpoint what do

1244

00:46:03,990 --> 00:46:01,839

you see happening in terms of engaging

1245

00:46:08,390 --> 00:46:04,000

more girls and women in stem in the next

1246

00:46:12,309 --> 00:46:09,829

well we're trying to work on it on a

1247

00:46:13,910 --> 00:46:12,319

number of levels you know

1248

00:46:16,069 --> 00:46:13,920

i'm surprised that the numbers aren't

1249

00:46:17,910 --> 00:46:16,079

bigger i went to college you know in the

1250

00:46:19,430 --> 00:46:17,920

70s um

1251

00:46:21,430 --> 00:46:19,440

when things were really

1252

00:46:23,109 --> 00:46:21,440

opening because of the wide cultural

1253

00:46:24,870 --> 00:46:23,119

changes in this country

1254

00:46:26,790 --> 00:46:24,880

and i just don't understand why it

1255

00:46:28,790 --> 00:46:26,800

didn't just keep going but what are we

1256

00:46:32,950 --> 00:46:28,800

specifically trying to do because it's

1257

00:46:35,109 --> 00:46:32,960

so fun i mean really and um

1258

00:46:36,309 --> 00:46:35,119

so specifically we're trying to

1259

00:46:39,109 --> 00:46:36,319

you know make

1260

00:46:41,270 --> 00:46:39,119

um teachers more comfortable with math

1261

00:46:43,750 --> 00:46:41,280

and science at every level trying to be

1262

00:46:45,750 --> 00:46:43,760

more intentional about informal science

1263

00:46:48,390 --> 00:46:45,760

i think that's a very big

1264

00:46:49,829 --> 00:46:48,400

role i didn't talk about the

1265

00:46:51,349 --> 00:46:49,839

white house easter egg roll that's

1266

00:46:53,270 --> 00:46:51,359

something i've worked on the last couple

1267

00:46:55,510 --> 00:46:53,280

of years because

1268

00:46:57,510 --> 00:46:55,520

we have science activities there we make

1269

00:46:58,950 --> 00:46:57,520

paper bag kites and what's so great

1270

00:47:00,870 --> 00:46:58,960

about that you know the egg roll is for

1271

00:47:02,870 --> 00:47:00,880

young very young children but the thing

1272

00:47:04,550 --> 00:47:02,880

about paper bag kites is that there's

1273

00:47:06,069 --> 00:47:04,560

not a prescriptive way to make it so

1274

00:47:09,030 --> 00:47:06,079

it's experimental it has the first

1275

00:47:10,950 --> 00:47:09,040

ladies let's move to it so the point is

1276

00:47:12,550 --> 00:47:10,960

uh doing science and engineering isn't

1277

00:47:14,870 --> 00:47:12,560

always about what you do in school i

1278

00:47:17,510 --> 00:47:14,880

mean as you're capturing interest and

1279

00:47:19,750 --> 00:47:17,520

attention and we're trying to reform uh

1280

00:47:22,309 --> 00:47:19,760

teaching and change the workplace by

1281

00:47:24,549 --> 00:47:22,319

having flexibility to talk about it so i

1282

00:47:27,910 --> 00:47:24,559

think there's a big push on all of these

1283

00:47:31,030 --> 00:47:27,920

actions coming along you know early

1284

00:47:32,630 --> 00:47:31,040

attracting people making uh the teachers

1285

00:47:34,309 --> 00:47:32,640

more comfortable because many of our

1286

00:47:35,910 --> 00:47:34,319

elementary teachers are not really all

1287

00:47:38,870 --> 00:47:35,920

that comfortable sometimes with math and

1288

00:47:41,030 --> 00:47:38,880

science so we want to support them more

1289

00:47:43,430 --> 00:47:41,040

we want to have changed education and we

1290

00:47:45,030 --> 00:47:43,440

want to have just a great system of jobs

1291

00:47:47,190 --> 00:47:45,040

both in the private sector and in the

1292

00:47:48,790 --> 00:47:47,200

public sector so um

1293

00:47:50,390 --> 00:47:48,800

you know that we make it work for whole

1294

00:47:52,069 --> 00:47:50,400

careers

1295

00:47:54,230 --> 00:47:52,079

i will add something pat talked about

1296

00:47:56,710 --> 00:47:54,240

the first lady and and the president's

1297

00:47:58,230 --> 00:47:56,720

interest in stem education uh one of the

1298

00:48:00,150 --> 00:47:58,240

most exciting things i've had the

1299

00:48:01,910 --> 00:48:00,160

opportunity to do since becoming the

1300

00:48:03,910 --> 00:48:01,920

nasa administrator and it was two

1301

00:48:05,990 --> 00:48:03,920

summers ago uh when the first lady

1302

00:48:09,030 --> 00:48:06,000

decided that it would be a good idea to

1303

00:48:11,030 --> 00:48:09,040

do an evening of stargazing and on the

1304

00:48:13,030 --> 00:48:11,040

south lawn of the white house

1305

00:48:16,710 --> 00:48:13,040

we brought in i want to say two dozen

1306

00:48:20,470 --> 00:48:16,720

telescopes of all sizes shapes and forms

1307

00:48:22,230 --> 00:48:20,480

a mobile planetarium inside a tent and

1308

00:48:24,069 --> 00:48:22,240

the first lady and the president and the

1309

00:48:26,950 --> 00:48:24,079

first family in fact came out it was a

1310

00:48:28,470 --> 00:48:26,960

cold night uh initially and it was

1311

00:48:30,790 --> 00:48:28,480

completely clouded

1312

00:48:32,790 --> 00:48:30,800

and uh because i am a person who

1313

00:48:35,030 --> 00:48:32,800

believed god god works in mysterious

1314

00:48:36,710 --> 00:48:35,040

ways uh as the president and the first

1315

00:48:38,230 --> 00:48:36,720

lady emerged

1316

00:48:41,109 --> 00:48:38,240

the sky cleared

1317

00:48:43,190 --> 00:48:41,119

and uh and and it was just a beautiful

1318

00:48:45,190 --> 00:48:43,200

starlit night and these were they had

1319

00:48:46,309 --> 00:48:45,200

200 inner city kids

1320

00:48:49,910 --> 00:48:46,319

uh

1321

00:48:51,270 --> 00:48:49,920

boys girls um who came out and for many

1322

00:48:53,270 --> 00:48:51,280

of them is it was the first time they'd

1323

00:48:55,430 --> 00:48:53,280

ever seen a telescope and they have an

1324

00:48:57,510 --> 00:48:55,440

astronomer help them

1325

00:48:59,589 --> 00:48:57,520

figure out which end to look into go

1326

00:49:01,589 --> 00:48:59,599

into the planetarium

1327

00:49:04,470 --> 00:49:01,599

it was just absolutely mesmerizing for

1328

00:49:06,549 --> 00:49:04,480

me to see that at nasa you know

1329

00:49:08,710 --> 00:49:06,559

pat has mentioned trying to give

1330

00:49:10,150 --> 00:49:08,720

teachers confidence in teaching math and

1331

00:49:13,190 --> 00:49:10,160

science so that they can reach young

1332

00:49:14,950 --> 00:49:13,200

women we have third year coming up on a

1333

00:49:16,950 --> 00:49:14,960

three-year pilot program called summer

1334

00:49:19,190 --> 00:49:16,960

of innovation where we at nasa have

1335

00:49:21,270 --> 00:49:19,200

focused on middle school kids because i

1336

00:49:22,069 --> 00:49:21,280

am a believer that high school's too

1337

00:49:24,230 --> 00:49:22,079

late

1338

00:49:25,990 --> 00:49:24,240

uh you know we we really need to be in

1339

00:49:28,870 --> 00:49:26,000

elementary school but we can't do that

1340

00:49:31,190 --> 00:49:28,880

so we're focused on middle school kids

1341

00:49:32,870 --> 00:49:31,200

and their teachers mainly because we can

1342

00:49:34,549 --> 00:49:32,880

reach a thousand kids if we reach a

1343

00:49:37,109 --> 00:49:34,559

thousand teachers we have now reached

1344

00:49:40,790 --> 00:49:37,119

multiply that times 22 in a classroom

1345

00:49:43,430 --> 00:49:40,800

and so what we do is we expose them uh

1346

00:49:45,190 --> 00:49:43,440

to all that we have in nasa our content

1347

00:49:47,670 --> 00:49:45,200

we are not the department of education

1348

00:49:49,510 --> 00:49:47,680

by any stretch of the imagination but we

1349

00:49:52,790 --> 00:49:49,520

bring in people who can talk about stem

1350

00:49:54,309 --> 00:49:52,800

education who can give teachers tools

1351

00:49:57,109 --> 00:49:54,319

who can show them where they can go to

1352

00:49:59,030 --> 00:49:57,119

the nasa website and and and make

1353

00:50:01,190 --> 00:49:59,040

themselves comfortable with basic

1354

00:50:03,750 --> 00:50:01,200

science so that when they stand in front

1355

00:50:05,670 --> 00:50:03,760

of a classroom they're not afraid uh

1356

00:50:08,390 --> 00:50:05,680

they're not intimidated because students

1357

00:50:09,990 --> 00:50:08,400

know that and so now we have teachers

1358

00:50:11,990 --> 00:50:10,000

who can go in front of their classroom

1359

00:50:14,309 --> 00:50:12,000

and inspire their kids to want to be

1360

00:50:16,549 --> 00:50:14,319

scientists and engineers and also help

1361

00:50:18,950 --> 00:50:16,559

them understand i like this that the

1362

00:50:21,589 --> 00:50:18,960

engineer is not just

1363

00:50:23,430 --> 00:50:21,599

the person in the first car of a train

1364

00:50:26,549 --> 00:50:23,440

you know the engineer is a person that

1365

00:50:35,030 --> 00:50:26,559

makes things and does things

1366

00:50:39,430 --> 00:50:37,990

thank you all so much for this wonderful

1367

00:50:42,470 --> 00:50:39,440

wonderful day

1368

00:50:44,870 --> 00:50:42,480

for your participation your input your

1369

00:50:46,870 --> 00:50:44,880

thoughts your energy and thank you to

1370

00:50:49,109 --> 00:50:46,880

all our wonderful speakers

1371

00:50:52,309 --> 00:50:49,119

one administrative note

1372

00:50:54,069 --> 00:50:52,319

foggy bottom metro has just reopened

1373

00:50:56,710 --> 00:50:54,079

after an incident but it's single

1374

00:51:00,150 --> 00:50:56,720

tracking so there are delays so you may

1375

00:51:02,230 --> 00:51:00,160

want to go to farragut west um and so

1376

00:51:04,390 --> 00:51:02,240

just a heads up on that

1377

00:51:07,190 --> 00:51:04,400

thank you all liquid galaxy by the way

1378

00:51:08,630 --> 00:51:07,200

downstairs is still open please go down