
I

1
00:00:07,990 --> 00:00:06,150
and houston this is station i'm ready

2
00:00:09,589 --> 00:00:08,000
for the event

3
00:00:11,589 --> 00:00:09,599
university of illinois this is mission

4
00:00:15,669 --> 00:00:11,599
control houston please call station for

5
00:00:19,269 --> 00:00:17,349
station this is philippe duvet

6
00:00:23,670 --> 00:00:19,279
university of illinois how do you hear

7
00:00:27,509 --> 00:00:25,429
and university of illinois fighting

8
00:00:31,429 --> 00:00:27,519
illini i hear you loud and clear and i'm

9
00:00:42,389 --> 00:00:32,310
all right

10
00:00:45,430 --> 00:00:43,430
mike

11
00:00:48,229 --> 00:00:45,440
thank you so much for taking the time to

12
00:00:50,389 --> 00:00:48,239
talk to us uh we have a very limited

13
00:00:52,310 --> 00:00:50,399

time so we've asked students to put

14
00:00:55,189 --> 00:00:52,320
together a few questions

15
00:00:57,830 --> 00:00:55,199
and uh without further delay let's

16
00:01:00,950 --> 00:00:57,840
let's get started

17
00:01:03,430 --> 00:01:00,960
mike my name is bentik that sounds great

18
00:01:06,310 --> 00:01:03,440
and my question is

19
00:01:08,870 --> 00:01:06,320
from experience what aspect of human

20
00:01:10,950 --> 00:01:08,880
travel still needs better solutions and

21
00:01:13,350 --> 00:01:10,960
what should the focus be for college

22
00:01:18,230 --> 00:01:13,360
students like us to solve for future

23
00:01:23,109 --> 00:01:20,070
yeah that's actually a great question

24
00:01:24,550 --> 00:01:23,119
and it's a tough one to answer as well

25
00:01:26,149 --> 00:01:24,560
because as we look at what we're doing

26
00:01:28,070 --> 00:01:26,159
now in low earth orbit a lot of the

27
00:01:30,310 --> 00:01:28,080
technologies are there as you can see

28
00:01:33,109 --> 00:01:30,320
but just by the operation of this space

29
00:01:35,030 --> 00:01:33,119
station but as we look at going further

30
00:01:36,710 --> 00:01:35,040
going beyond low earth orbit onto an

31
00:01:38,710 --> 00:01:36,720
asteroid or back to the moon or even to

32
00:01:40,310 --> 00:01:38,720
mars we need to start i think

33
00:01:42,469 --> 00:01:40,320
looking at how we can be a little more

34
00:01:45,350 --> 00:01:42,479
autonomous in our operations up here we

35
00:01:47,190 --> 00:01:45,360
have a fantastic ground team that is a

36
00:01:49,510 --> 00:01:47,200
part of running the space station on a

37
00:01:51,670 --> 00:01:49,520
day-to-day basis and we need them and

38
00:01:54,789 --> 00:01:51,680

and it wouldn't work without them but if

39
00:01:56,469 --> 00:01:54,799
we're looking at going further out into

40
00:01:58,310 --> 00:01:56,479
into the universe then we need to be

41
00:01:59,670 --> 00:01:58,320
able to do that somewhat independently

42
00:02:02,069 --> 00:01:59,680
and so as you start to look at all of

43
00:02:04,230 --> 00:02:02,079
the technologies i think that's one area

44
00:02:06,389 --> 00:02:04,240
that we need to focus on is is being

45
00:02:08,949 --> 00:02:06,399
able to have them be a little more

46
00:02:10,389 --> 00:02:08,959
autonomous a little more reliable and

47
00:02:11,830 --> 00:02:10,399
and a crew on board being able to

48
00:02:16,550 --> 00:02:11,840
operate them without as much help from

49
00:02:19,589 --> 00:02:17,670
thanks

50
00:02:21,110 --> 00:02:19,599
hey mike i'm michael miller i'm a

51
00:02:23,030 --> 00:02:21,120
sophomore here

52
00:02:25,589 --> 00:02:23,040
can you tell us one thing about the

53
00:02:27,110 --> 00:02:25,599
station space station that none of us

54
00:02:28,470 --> 00:02:27,120
could learn from anywhere else except

55
00:02:32,390 --> 00:02:28,480
from somebody who's actually living

56
00:02:36,550 --> 00:02:34,390
yeah i actually love that question and

57
00:02:37,670 --> 00:02:36,560
and it's a it's a pretty tough question

58
00:02:39,430 --> 00:02:37,680
to answer

59
00:02:41,030 --> 00:02:39,440
uh but there was something that i was

60
00:02:43,110 --> 00:02:41,040
struck with when probably the first day

61
00:02:44,869 --> 00:02:43,120
that i was up here and that is that the

62
00:02:46,710 --> 00:02:44,879
the station is even more amazing than i

63
00:02:48,790 --> 00:02:46,720

ever thought it was gonna be

64
00:02:50,949 --> 00:02:48,800
and in some sense i i feel like it's

65
00:02:53,270 --> 00:02:50,959
alive i mean there's there's just this

66
00:02:55,030 --> 00:02:53,280
constant uh there's this constant noise

67
00:02:56,550 --> 00:02:55,040
it has its own

68
00:02:59,270 --> 00:02:56,560
i don't know you just hear it every day

69
00:03:01,270 --> 00:02:59,280
when you're up here and it's a good it's

70
00:03:03,750 --> 00:03:01,280
it's good to hear that it's good sounds

71
00:03:06,149 --> 00:03:03,760
and and you just feel like the station

72
00:03:07,430 --> 00:03:06,159
is is alive and you're getting this

73
00:03:11,990 --> 00:03:07,440
opportunity to

74
00:03:13,990 --> 00:03:12,000
it and and so i think that's something

75
00:03:15,750 --> 00:03:14,000
that even with all the simulators we

76
00:03:17,270 --> 00:03:15,760
have on the ground that look exactly

77
00:03:19,430 --> 00:03:17,280
like this until you're up here and you

78
00:03:21,270 --> 00:03:19,440
feel that and you hear it and and you

79
00:03:22,470 --> 00:03:21,280
sense it uh that's probably something

80
00:03:29,030 --> 00:03:22,480
that you'll you'll never get unless

81
00:03:33,670 --> 00:03:30,869
hey mike uh thanks for talking to us

82
00:03:36,070 --> 00:03:33,680
today i'm dan rogers i'm a senior here

83
00:03:37,830 --> 00:03:36,080
my question uh the iss serves as an

84
00:03:39,990 --> 00:03:37,840
excellent place to do scientific

85
00:03:42,470 --> 00:03:40,000
research what experiments is the station

86
00:03:44,149 --> 00:03:42,480
working on right now and

87
00:03:45,509 --> 00:03:44,159
what would you like to see as far as

88
00:03:49,030 --> 00:03:45,519

scientific experiments in the coming

89
00:03:52,070 --> 00:03:50,550
yeah that's uh that's another great

90
00:03:53,509 --> 00:03:52,080
question and there's a there's a ton of

91
00:03:55,350 --> 00:03:53,519
science going on up here in fact during

92
00:03:56,949 --> 00:03:55,360
our increment we expect to see around

93
00:03:59,270 --> 00:03:56,959
200 experiments that are going to be

94
00:04:01,830 --> 00:03:59,280
performed and they range from

95
00:04:03,830 --> 00:04:01,840
experiments that astronauts are not as

96
00:04:05,429 --> 00:04:03,840
involved in so for example there's the

97
00:04:07,350 --> 00:04:05,439
alpha magnetic spectrometer which is

98
00:04:09,110 --> 00:04:07,360
looking for the origins of the universe

99
00:04:11,110 --> 00:04:09,120
and our involvement as astronauts in

100
00:04:12,789 --> 00:04:11,120
that is to simply keep the station

101
00:04:14,710 --> 00:04:12,799
running and providing the power and the

102
00:04:17,030 --> 00:04:14,720
data and the communication links that

103
00:04:19,270 --> 00:04:17,040
that payload that experiment needs to to

104
00:04:21,990 --> 00:04:19,280
perform other experiments that are going

105
00:04:24,150 --> 00:04:22,000
on um the capillary flow experiments so

106
00:04:25,830 --> 00:04:24,160
it's it's looking at how fluids behave

107
00:04:28,230 --> 00:04:25,840
in microgravity and how they'll move

108
00:04:30,150 --> 00:04:28,240
along surfaces in different ways that

109
00:04:32,629 --> 00:04:30,160
you don't see down on earth and so

110
00:04:35,510 --> 00:04:32,639
there's a lot of potential there for uh

111
00:04:37,189 --> 00:04:35,520
for future space flight in moving fluids

112
00:04:39,189 --> 00:04:37,199
around without necessarily or separating

113
00:04:40,950 --> 00:04:39,199

them from from gases without necessarily

114
00:04:42,550 --> 00:04:40,960
needing pumps and then there's the

115
00:04:44,870 --> 00:04:42,560
experiments that we're very involved in

116
00:04:46,629 --> 00:04:44,880
because we're the guinea pigs and so for

117
00:04:48,469 --> 00:04:46,639
example one of the things we always have

118
00:04:49,909 --> 00:04:48,479
to contend with is

119
00:04:52,150 --> 00:04:49,919
is uh

120
00:04:53,670 --> 00:04:52,160
bone loss and muscle loss and so one of

121
00:04:55,350 --> 00:04:53,680
them is a pro k where we're looking at

122
00:04:56,629 --> 00:04:55,360
the relationship between protein and

123
00:04:58,710 --> 00:04:56,639
potassium

124
00:05:01,270 --> 00:04:58,720
and how that may impact our bone loss

125
00:05:03,029 --> 00:05:01,280
and so those are all very important

126
00:05:04,310 --> 00:05:03,039
i think

127
00:05:05,749 --> 00:05:04,320
in the future you're just going to see a

128
00:05:07,830 --> 00:05:05,759
continuation of those types of

129
00:05:09,350 --> 00:05:07,840
experiments that are looking at both

130
00:05:10,390 --> 00:05:09,360
what we need for future space

131
00:05:12,310 --> 00:05:10,400
exploration

132
00:05:17,990 --> 00:05:12,320
and then also things that are very

133
00:05:21,909 --> 00:05:19,749
thanks mike my name is jenny roderick

134
00:05:23,430 --> 00:05:21,919
and i'm a super senior my question is

135
00:05:25,110 --> 00:05:23,440
what scientific and engineering

136
00:05:26,629 --> 00:05:25,120
principles are most important to know

137
00:05:30,790 --> 00:05:26,639
while working and living aboard the

138
00:05:34,710 --> 00:05:32,629

yeah i think i was a super senior too at

139
00:05:36,710 --> 00:05:34,720
one point in time

140
00:05:38,629 --> 00:05:36,720
you know there's

141
00:05:40,710 --> 00:05:38,639
the thing about life up here is you need

142
00:05:42,870 --> 00:05:40,720
it all you have to kind of be a jack of

143
00:05:45,189 --> 00:05:42,880
all trades you have to have a lot of uh

144
00:05:46,550 --> 00:05:45,199
not just book knowledge uh engineering

145
00:05:48,629 --> 00:05:46,560
principles and things like that but you

146
00:05:50,150 --> 00:05:48,639
also have need to have a lot of hands-on

147
00:05:53,270 --> 00:05:50,160
experience you need to be able to crank

148
00:05:55,510 --> 00:05:53,280
the wrench in fact today i spent time

149
00:05:58,870 --> 00:05:55,520
repairing our carbon dioxide removal

150
00:05:59,990 --> 00:05:58,880
assembly and also replacing a ccaa which

151
00:06:01,350 --> 00:06:00,000
is a

152
00:06:03,110 --> 00:06:01,360
an airflow

153
00:06:05,430 --> 00:06:03,120
what we use for our our conditioning of

154
00:06:06,309 --> 00:06:05,440
the air up here and you know so there

155
00:06:08,070 --> 00:06:06,319
you're doing just kind of some

156
00:06:09,749 --> 00:06:08,080
maintenance type work and and then when

157
00:06:11,350 --> 00:06:09,759
you're doing those like that capillary

158
00:06:13,350 --> 00:06:11,360
flow experiment that i talked about well

159
00:06:14,950 --> 00:06:13,360
then some of that uh engineering and

160
00:06:16,550 --> 00:06:14,960
physics principles need to need to come

161
00:06:18,309 --> 00:06:16,560
in so you need to be a jack of all

162
00:06:23,110 --> 00:06:18,319
trades and i think that's as important

163
00:06:27,110 --> 00:06:25,029

thanks mike i'm sarah barrett i'm a

164
00:06:31,510 --> 00:06:27,120
senior here what is your favorite thing

165
00:06:37,909 --> 00:06:33,270
well that's an easy one for me my

166
00:06:42,550 --> 00:06:39,510
and i don't know many places that you

167
00:06:46,550 --> 00:06:44,469
i mean that's a lot of fun

168
00:06:48,309 --> 00:06:46,560
you uh i don't know it doesn't get old

169
00:06:49,670 --> 00:06:48,319
even just in the middle of your work day

170
00:06:51,749 --> 00:06:49,680
as you get to float around from one

171
00:06:53,510 --> 00:06:51,759
module to another it's it's just fun

172
00:06:58,629 --> 00:06:53,520
it's it's absolutely fantastic it's

173
00:07:02,550 --> 00:07:01,270
uh hey mike i'm mustafa mukadam i'm

174
00:07:04,390 --> 00:07:02,560
studying masters in aerospace

175
00:07:06,230 --> 00:07:04,400
engineering my question is

176
00:07:08,070 --> 00:07:06,240
how frequently do you lose the sense of

177
00:07:09,749 --> 00:07:08,080
time when you're not looking at clocks

178
00:07:12,070 --> 00:07:09,759
since you don't see the sun rise and

179
00:07:13,589 --> 00:07:12,080
fall and it's constantly dark outside

180
00:07:15,110 --> 00:07:13,599
does that have any psychologically

181
00:07:19,990 --> 00:07:15,120
depressing effects on the daily life of

182
00:07:23,510 --> 00:07:21,110
yeah you know that's an interesting

183
00:07:25,029 --> 00:07:23,520
question because uh unfortunately we're

184
00:07:27,670 --> 00:07:25,039
always looking at the clock up here we

185
00:07:29,510 --> 00:07:27,680
have a very tight schedule every day

186
00:07:30,950 --> 00:07:29,520
and uh so and there's this in that

187
00:07:32,790 --> 00:07:30,960
schedule there's this little red line

188
00:07:34,230 --> 00:07:32,800

that just constantly goes across that's

189
00:07:36,070 --> 00:07:34,240
telling you what time it is and as you

190
00:07:37,510 --> 00:07:36,080
look at your tasks you know whether

191
00:07:40,469 --> 00:07:37,520
you're ahead or you're behind and we

192
00:07:43,749 --> 00:07:40,479
kind of live by that and so our schedule

193
00:07:45,589 --> 00:07:43,759
up here is uh it's down to five minute

194
00:07:47,110 --> 00:07:45,599
increments and so

195
00:07:48,869 --> 00:07:47,120
you never kind of lose that sense of

196
00:07:50,550 --> 00:07:48,879
time because you're always aware that

197
00:07:51,350 --> 00:07:50,560
i've got tasks to do or something like

198
00:07:54,230 --> 00:07:51,360
that

199
00:07:55,670 --> 00:07:54,240
when you're inside and you're not

200
00:07:58,230 --> 00:07:55,680
looking out and when you're not looking

201
00:08:00,629 --> 00:07:58,240
outside at the the sun rises and sets

202
00:08:02,629 --> 00:08:00,639
you don't get that sense of uh 16

203
00:08:05,189 --> 00:08:02,639
sunrises and sets every day so it's

204
00:08:11,430 --> 00:08:05,199
really uh you know it's it we don't lose

205
00:08:16,230 --> 00:08:14,230
hey mike i'm nick bolton i'm a sophomore

206
00:08:18,469 --> 00:08:16,240
how will astronauts prepare for flights

207
00:08:24,550 --> 00:08:18,479
the station in the future on spacecraft

208
00:08:27,830 --> 00:08:25,749
yeah so a lot of the training is going

209
00:08:29,830 --> 00:08:27,840
to be very similar to what we do now in

210
00:08:32,070 --> 00:08:29,840
fact um what you're going to find the

211
00:08:33,110 --> 00:08:32,080
space station side of the house that

212
00:08:34,790 --> 00:08:33,120
training is not going to be any

213
00:08:38,149 --> 00:08:34,800

different and we and we do that training

214
00:08:40,070 --> 00:08:38,159
both at houston in japan in europe and

215
00:08:41,589 --> 00:08:40,080
also in russia and that's going to still

216
00:08:43,509 --> 00:08:41,599
have to happen no matter what vehicle

217
00:08:44,870 --> 00:08:43,519
you're coming up on the big difference

218
00:08:47,269 --> 00:08:44,880
of course is going to be if we're riding

219
00:08:49,030 --> 00:08:47,279
up on a u.s commercial vehicle well then

220
00:08:51,190 --> 00:08:49,040
that training

221
00:08:52,790 --> 00:08:51,200
is going to likely occur all in the u.s

222
00:08:54,310 --> 00:08:52,800
and whether that's in houston or where

223
00:08:56,230 --> 00:08:54,320
the commercial vendors are is probably

224
00:08:58,550 --> 00:08:56,240
still to be determined but what that

225
00:08:59,829 --> 00:08:58,560
means for for future astronauts is

226
00:09:01,750 --> 00:08:59,839
you're not going to have to travel quite

227
00:09:04,150 --> 00:09:01,760
as much i spent over two and a half year

228
00:09:05,509 --> 00:09:04,160
training program i spent uh probably

229
00:09:08,070 --> 00:09:05,519
about a year to a year and a half of

230
00:09:14,470 --> 00:09:08,080
that away from home and family and so i

231
00:09:18,389 --> 00:09:16,949
all right i think we got the the sign

232
00:09:19,430 --> 00:09:18,399
that we have to

233
00:09:22,150 --> 00:09:19,440
stop it

234
00:09:24,230 --> 00:09:22,160
so i really thank you so much for taking

235
00:09:26,389 --> 00:09:24,240
the time to do this considering how busy

236
00:09:28,470 --> 00:09:26,399
your schedule is and uh

237
00:09:31,990 --> 00:09:28,480
and and good luck for the next five

238
00:09:35,829 --> 00:09:33,670

well thank you very much it's an

239
00:09:38,230 --> 00:09:35,839
absolute pleasure to to talk to you guys

240
00:09:39,829 --> 00:09:38,240
i wish we could do this more in fact i

241
00:09:41,110 --> 00:09:39,839
may try uh professor i may try and get

242
00:09:42,470 --> 00:09:41,120
in touch with you a little bit and

243
00:09:43,829 --> 00:09:42,480
because i know there was more questions

244
00:09:45,829 --> 00:09:43,839
and i'd love to be able to answer them

245
00:09:47,190 --> 00:09:45,839
and so uh i think if your email is out

246
00:09:49,350 --> 00:09:47,200
there i'll i'll try and get a hold of

247
00:09:53,990 --> 00:09:49,360
you and and maybe we can continue the

248
00:10:01,350 --> 00:09:55,829
all right that'd be fantastic thank you

249
00:10:01,360 --> 00:10:06,230
bye everyone

250
00:10:12,550 --> 00:10:08,949
station this is houston acr thank you

251
00:10:16,310 --> 00:10:14,550
thank you university of illinois station