

## Chimneys with more concentrated Iron, Sulfur, and Silicate



1  
00:00:12,020 --> 00:00:09,950  
this is just sort of a advertisement and

2  
00:00:14,959 --> 00:00:12,030  
heads up for some of the most successful

3  
00:00:16,730 --> 00:00:14,969  
things that have come out of the AB grad

4  
00:00:19,849 --> 00:00:16,740  
cons in the past is something to keep

5  
00:00:23,060 --> 00:00:19,859  
your mind on while you're at a break on

6  
00:00:24,710 --> 00:00:23,070  
meeting new people just some of the

7  
00:00:26,630 --> 00:00:24,720  
important things that you can do after

8  
00:00:28,130 --> 00:00:26,640  
AB grad con to keep this experience

9  
00:00:30,109 --> 00:00:28,140  
going in to help yourself be a better

10  
00:00:32,659 --> 00:00:30,119  
astrobiologist so I'm going to be

11  
00:00:36,560 --> 00:00:32,669  
talking about s astrobiology journal

12  
00:00:41,990 --> 00:00:36,570  
clubs collaborations and also looking

13  
00:00:45,440 --> 00:00:42,000

for organizers for next year so why form

14

00:00:48,440 --> 00:00:45,450

an online journal club one of the main

15

00:00:51,350 --> 00:00:48,450

reasons is astrobiology is a hugely

16

00:00:54,200 --> 00:00:51,360

diverse field and it is hard to be an

17

00:00:56,660 --> 00:00:54,210

expert in all of those but it is nice to

18

00:00:59,270 --> 00:00:56,670

be familiar what's happening in the

19

00:01:02,060 --> 00:00:59,280

field the other fields of astrobiology

20

00:01:06,139 --> 00:01:02,070

as it helps to drive your research as

21

00:01:08,060 --> 00:01:06,149

well too because a its clout it's a very

22

00:01:10,340 --> 00:01:08,070

interdisciplinary and so all these

23

00:01:11,840 --> 00:01:10,350

fields tie into each other and we're all

24

00:01:14,060 --> 00:01:11,850

trying to work on the same questions

25

00:01:16,700 --> 00:01:14,070

here and so we don't want to be confused

26

00:01:18,170 --> 00:01:16,710

like Marty McFly out of time we want to

27

00:01:20,930 --> 00:01:18,180

know what's going on when somebody's

28

00:01:25,429 --> 00:01:20,940

talking about geo microbiology or

29

00:01:29,030 --> 00:01:25,439

astrochemistry the other thing is that

30

00:01:32,600 --> 00:01:29,040

as astrobiologists in this field we are

31

00:01:35,660 --> 00:01:32,610

often isolated in and spread out across

32

00:01:39,140 --> 00:01:35,670

the country so a lot of us are fortunate

33

00:01:42,890 --> 00:01:39,150

to be in large department at like

34

00:01:46,580 --> 00:01:42,900

georgia tech for example or RPI even has

35

00:01:48,200 --> 00:01:46,590

a sizable growing department where you

36

00:01:49,550 --> 00:01:48,210

can have a lot of fellow graduate

37

00:01:51,620 --> 00:01:49,560

students that are working in the field

38

00:01:53,990 --> 00:01:51,630

too but a lot of us were the only

39

00:01:56,990 --> 00:01:54,000

astrobiologists at the school and so

40

00:01:58,789 --> 00:01:57,000

it's hard to find other srl just to talk

41

00:02:00,380 --> 00:01:58,799

to and to communicate with and to keep

42

00:02:03,170 --> 00:02:00,390

up on what's going on in the field and

43

00:02:05,210 --> 00:02:03,180

so if you form journal clubs based upon

44

00:02:07,460 --> 00:02:05,220

the people that you meet here you can

45

00:02:09,679 --> 00:02:07,470

meet online and still have access to

46

00:02:11,509 --> 00:02:09,689

experts in the field and a fun way of

47

00:02:14,269 --> 00:02:11,519

talking and communicating about the

48

00:02:16,129 --> 00:02:14,279

fields that you work in and so that's

49

00:02:18,320 --> 00:02:16,139

the second reason why the form of an

50

00:02:19,790 --> 00:02:18,330

online journal club and also

51  
00:02:21,230 --> 00:02:19,800  
get to keep in touch and build

52  
00:02:23,060 --> 00:02:21,240  
friendships with some of the people that

53  
00:02:24,680 --> 00:02:23,070  
you meet here so who knows maybe you

54  
00:02:26,390 --> 00:02:24,690  
hate everybody you meet here and want

55  
00:02:31,370 --> 00:02:26,400  
nothing to do with them but hopefully

56  
00:02:35,210 --> 00:02:31,380  
that's not the case so it's pretty easy

57  
00:02:37,790 --> 00:02:35,220  
you get together with a know like five

58  
00:02:39,710 --> 00:02:37,800  
four to five people our journal club

59  
00:02:42,080 --> 00:02:39,720  
that I'm in right now I think has eight

60  
00:02:44,480 --> 00:02:42,090  
people in it but you get together and

61  
00:02:46,730 --> 00:02:44,490  
like hey one former journal club sure

62  
00:02:49,850 --> 00:02:46,740  
these this thing you can do is just use

63  
00:02:51,980 --> 00:02:49,860

some software down the line Google+ is

64

00:02:53,900 --> 00:02:51,990

what we currently use as it works best

65

00:02:56,449 --> 00:02:53,910

for us you're able to share power point

66

00:02:58,760 --> 00:02:56,459

slides you can see videos of everybody

67

00:03:01,190 --> 00:02:58,770

there google+ supports up to 10 people

68

00:03:03,890 --> 00:03:01,200

which we just learned the hard way a

69

00:03:06,110 --> 00:03:03,900

couple weeks ago but as lies your

70

00:03:09,199 --> 00:03:06,120

journal club is that size or less you're

71

00:03:12,230 --> 00:03:09,209

perfectly okay we've also used a skype

72

00:03:14,120 --> 00:03:12,240

and i believe it went completely free

73

00:03:16,190 --> 00:03:14,130

now so i think you can do

74

00:03:18,410 --> 00:03:16,200

teleconferences there through skype with

75

00:03:21,430 --> 00:03:18,420

the 10-person limit as well and if your

76

00:03:23,840 --> 00:03:21,440

school has access to adobe connect

77

00:03:26,020 --> 00:03:23,850

that's how we initially started so you

78

00:03:28,370 --> 00:03:26,030

can do adobe connect as long as you're

79

00:03:30,830 --> 00:03:28,380

up to date with the software it works

80

00:03:32,540 --> 00:03:30,840

quite well we had some problems with our

81

00:03:34,840 --> 00:03:32,550

older version which is why we switched

82

00:03:37,759 --> 00:03:34,850

over to google plus we get the people

83

00:03:39,770 --> 00:03:37,769

form an online community and you can

84

00:03:44,030 --> 00:03:39,780

format your journal club however you

85

00:03:46,340 --> 00:03:44,040

want for these online tools and here's

86

00:03:49,280 --> 00:03:46,350

just a quick sampling of the diversity

87

00:03:52,910 --> 00:03:49,290

of the journal club talks that we have

88

00:03:55,610 --> 00:03:52,920

had and so we'll talk about genetic

89

00:03:58,490 --> 00:03:55,620

polymers dealing with the RNA world we

90

00:04:02,080 --> 00:03:58,500

deal with modeling environments on

91

00:04:05,780 --> 00:04:02,090

Europa believe that was yours nascent

92

00:04:08,690 --> 00:04:05,790

bio signatures sulfur isotope

93

00:04:11,630 --> 00:04:08,700

geochemistry and so it's a very diverse

94

00:04:13,250 --> 00:04:11,640

field and I'd be completely lost looking

95

00:04:16,039 --> 00:04:13,260

at some of these papers myself so it's

96

00:04:18,020 --> 00:04:16,049

nice having experts in these fields to

97

00:04:20,840 --> 00:04:18,030

walk us through and to ask questions and

98

00:04:22,969 --> 00:04:20,850

it's actually took fun time takes less

99

00:04:25,670 --> 00:04:22,979

than an hour have a great question back

100

00:04:28,630 --> 00:04:25,680

and forth and can cover all of these

101  
00:04:32,290 --> 00:04:28,640  
topics and whatever else you want to so

102  
00:04:34,820 --> 00:04:32,300  
I recommend finding people

103  
00:04:36,740 --> 00:04:34,830  
forming a journal club you can do it

104  
00:04:39,740 --> 00:04:36,750  
either here or try to track down some

105  
00:04:42,770 --> 00:04:39,750  
people at the collaboration time

106  
00:04:44,720 --> 00:04:42,780  
tomorrow also if you're having trouble

107  
00:04:46,640 --> 00:04:44,730  
meetings people if you're somewhat shy

108  
00:04:48,680 --> 00:04:46,650  
you can come talk to me I'll be

109  
00:04:50,960 --> 00:04:48,690  
collecting a list of people that will

110  
00:04:53,630 --> 00:04:50,970  
want to do to do journal clubs as well

111  
00:04:55,790 --> 00:04:53,640  
and I'll share the list with everybody

112  
00:04:59,420 --> 00:04:55,800  
and you can form general clubs through

113  
00:05:00,860 --> 00:04:59,430

that and also Sanjay some who I believe

114

00:05:03,650 --> 00:05:00,870

was watching right now who's in charge

115

00:05:05,420 --> 00:05:03,660

of Sagan net they also allow journal

116

00:05:07,070 --> 00:05:05,430

clubs and promote them through say

117

00:05:09,500 --> 00:05:07,080

Gannett so he'll be talking about that

118

00:05:11,150 --> 00:05:09,510

feature on Wednesday as well and so you

119

00:05:13,370 --> 00:05:11,160

can definitely funnel your general clubs

120

00:05:16,070 --> 00:05:13,380

through the online astrobiology social

121

00:05:18,650 --> 00:05:16,080

networking as well but form your own

122

00:05:20,390 --> 00:05:18,660

clubs come talk to me or work on second

123

00:05:25,130 --> 00:05:20,400

that three great ways to try to track

124

00:05:27,970 --> 00:05:25,140

down journal clubs also we have had a

125

00:05:32,330 --> 00:05:27,980

lot of collaborations that come out of

126

00:05:33,680 --> 00:05:32,340

AB grad con so if you see a lot of if

127

00:05:36,470 --> 00:05:33,690

you see some toxins you're quite

128

00:05:38,210 --> 00:05:36,480

interested in and think that working

129

00:05:40,520 --> 00:05:38,220

together could help to further your

130

00:05:42,140 --> 00:05:40,530

research or their research feel free to

131

00:05:44,210 --> 00:05:42,150

walk up to the person just talk to them

132

00:05:46,640 --> 00:05:44,220

about working together a lot of

133

00:05:48,020 --> 00:05:46,650

collaborations come out of a brad con

134

00:05:51,620 --> 00:05:48,030

and it's pretty great because we're not

135

00:05:54,590 --> 00:05:51,630

experts all in all the fields so I

136

00:05:58,250 --> 00:05:54,600

started a collaboration a couple years

137

00:06:00,680 --> 00:05:58,260

ago with a some science with some

138

00:06:03,980 --> 00:06:00,690

scientist Laurie barge from a JPL and

139

00:06:06,650 --> 00:06:03,990

last year I presented on the results of

140

00:06:09,260 --> 00:06:06,660

our collaboration so I work on RNA

141

00:06:10,940 --> 00:06:09,270

synthesis and she works on forming a

142

00:06:14,150 --> 00:06:10,950

hydrothermal vents at the bottom the

143

00:06:18,860 --> 00:06:14,160

ocean floor so we looked at whether or

144

00:06:22,730 --> 00:06:18,870

not we could synthesize RNA in her in

145

00:06:25,460 --> 00:06:22,740

her hydrothermal systems and so she came

146

00:06:27,890 --> 00:06:25,470

to our lab for two weeks in February a

147

00:06:29,840 --> 00:06:27,900

couple years ago and built these small

148

00:06:31,700 --> 00:06:29,850

little chimneys in our lab and taught us

149

00:06:34,220 --> 00:06:31,710

how to do it as well too so these are

150

00:06:36,290 --> 00:06:34,230

iron sulfide chimneys representing some

151

00:06:39,230 --> 00:06:36,300

serpent and ization systems on the

152

00:06:41,020 --> 00:06:39,240

bottom the ocean floor I ran some RNA

153

00:06:44,240 --> 00:06:41,030

synthetic reactions through it and

154

00:06:45,310 --> 00:06:44,250

analyze the results as this is what I'm

155

00:06:48,010 --> 00:06:45,320

an expert in

156

00:06:50,080 --> 00:06:48,020

and actually saw some RNA that formed

157

00:06:53,080 --> 00:06:50,090

from the chimneys which we are about to

158

00:06:54,580 --> 00:06:53,090

publish in a paper I'd say within a

159

00:06:56,110 --> 00:06:54,590

month that's what we're targeting right

160

00:06:59,080 --> 00:06:56,120

now it's all written we're just about to

161

00:07:00,850 --> 00:06:59,090

start shopping it around so it's cool

162

00:07:02,710 --> 00:07:00,860

and this is not something that I could

163

00:07:04,600 --> 00:07:02,720

have done without getting a without

164

00:07:07,030 --> 00:07:04,610

talking to her at Caltech a couple years

165

00:07:07,900 --> 00:07:07,040

ago in forming this collaboration and so

166

00:07:11,980 --> 00:07:07,910

if it's something that you're interested

167

00:07:13,390 --> 00:07:11,990

in NASA actually funds through the

168

00:07:15,790 --> 00:07:13,400

astrobiology institute these

169

00:07:18,550 --> 00:07:15,800

collaborative projects as well so

170

00:07:21,070 --> 00:07:18,560

there's an S or biology program early

171

00:07:23,380 --> 00:07:21,080

career collaboration award and this is

172

00:07:25,510 --> 00:07:23,390

an award that will give you five

173

00:07:28,360 --> 00:07:25,520

thousand dollars for traveling between

174

00:07:30,880 --> 00:07:28,370

sites to conduct your work and it's

175

00:07:33,820 --> 00:07:30,890

specifically targeted at our group here

176

00:07:35,740 --> 00:07:33,830

at early career scientists you can get

177

00:07:37,810 --> 00:07:35,750

the ORD from undergrads through junior

178

00:07:39,340 --> 00:07:37,820

scientists so if you're a postdoc you're

179

00:07:42,940 --> 00:07:39,350

just starting out this is something that

180

00:07:45,850 --> 00:07:42,950

you're eligible for its easiest to get

181

00:07:47,770 --> 00:07:45,860

the award if you have to na nai team

182

00:07:51,310 --> 00:07:47,780

members matched up or if one of you is a

183

00:07:53,500 --> 00:07:51,320

hub but they still allow it to go

184

00:07:54,940 --> 00:07:53,510

through participating members and when

185

00:07:56,980 --> 00:07:54,950

we applied to this they were very

186

00:07:58,690 --> 00:07:56,990

excited that we applied to it and so I

187

00:08:02,770 --> 00:07:58,700

think that they're always looking for

188

00:08:05,470 --> 00:08:02,780

teams to supply this funding to the

189

00:08:07,990 --> 00:08:05,480

deadlines for these for submitting this

190

00:08:10,000 --> 00:08:08,000

request is April first in October first

191

00:08:11,850 --> 00:08:10,010

and so October first is right around the

192

00:08:15,180 --> 00:08:11,860

corner so right now is a perfect time to

193

00:08:17,980 --> 00:08:15,190

get together develop a research plan

194

00:08:20,650 --> 00:08:17,990

yeah bruh oh I see thought you had a

195

00:08:22,600 --> 00:08:20,660

question to develop a research plan and

196

00:08:24,940 --> 00:08:22,610

submit a proposal so you can either

197

00:08:28,480 --> 00:08:24,950

search for the early career

198

00:08:30,040 --> 00:08:28,490

collaboration award or there's this URL

199

00:08:31,840 --> 00:08:30,050

which probably don't have time to copy

200

00:08:33,969 --> 00:08:31,850

down right now but it's very easy to

201  
00:08:36,370 --> 00:08:33,979  
find through a Google search so go on

202  
00:08:42,000 --> 00:08:36,380  
there submit your request and get money

203  
00:08:44,110 --> 00:08:42,010  
and fly and see collaborators also oh

204  
00:08:46,270 --> 00:08:44,120  
and if you have any more questions about

205  
00:08:48,220 --> 00:08:46,280  
the collaboration stuff you can talk to

206  
00:08:50,250 --> 00:08:48,230  
me directly as well too as I went

207  
00:08:52,240 --> 00:08:50,260  
through the process and I can share my

208  
00:08:55,330 --> 00:08:52,250  
experience with what happened for that

209  
00:08:58,569 --> 00:08:55,340  
and also keep in mind during this

210  
00:09:00,579 --> 00:08:58,579  
conference that somebody in this room

211  
00:09:02,949 --> 00:09:00,589  
is going to have to plan it for next

212  
00:09:04,389 --> 00:09:02,959  
year so if you're sitting there and

213  
00:09:06,879 --> 00:09:04,399

think that this is something you want to

214

00:09:08,530 --> 00:09:06,889

do if you have way too much free time or

215

00:09:12,100 --> 00:09:08,540

never feel like you have enough emails

216

00:09:14,019 --> 00:09:12,110

to go through totally step up it decide

217

00:09:16,809 --> 00:09:14,029

to be a collaborator so this is

218

00:09:18,669 --> 00:09:16,819

something we're going to have a meeting

219

00:09:21,999 --> 00:09:18,679

tomorrow during the collaboration time

220

00:09:24,249 --> 00:09:22,009

come up find me or another organizer and

221

00:09:26,049 --> 00:09:24,259

say you're interested we will try to get

222

00:09:29,199 --> 00:09:26,059

you guys in touch with each other to

223

00:09:31,329 --> 00:09:29,209

form a very preliminary committee so our

224

00:09:34,059 --> 00:09:31,339

committee last year out of a grad con I

225

00:09:36,850 --> 00:09:34,069

believe had like 15 members on it coming

226

00:09:40,299 --> 00:09:36,860

out and eventually got weeded down over

227

00:09:42,249 --> 00:09:40,309

the course to I think eight I think

228

00:09:44,350 --> 00:09:42,259

eight to ten is what our sizes right now

229

00:09:47,319 --> 00:09:44,360

and so if you're just remotely

230

00:09:48,850 --> 00:09:47,329

interested come on get on board talk to

231

00:09:50,319 --> 00:09:48,860

them and you can always you know drop

232

00:09:52,989 --> 00:09:50,329

out later if you decide that it's too

233

00:09:54,910 --> 00:09:52,999

much work for you but definitely keep it

234

00:09:56,819 --> 00:09:54,920

in mind if you want to plan it if you

235

00:09:59,289 --> 00:09:56,829

want to have it your school

236

00:10:01,179 --> 00:09:59,299

collaboration time figure this out and

237

00:10:02,439 --> 00:10:01,189

we'll get this going next year what

238

00:10:03,819 --> 00:10:02,449

they've done at previous aggregate

239

00:10:05,739 --> 00:10:03,829

consciousness they have announced the

240

00:10:08,079 --> 00:10:05,749

site that is going to be for the

241

00:10:09,759 --> 00:10:08,089

following year by the end of a broadcom

242

00:10:11,559 --> 00:10:09,769

so that's always a cool thing so if you

243

00:10:14,289 --> 00:10:11,569

guys are really on top of things we can

244

00:10:16,780 --> 00:10:14,299

do that announcement on Wednesday and

245

00:10:18,909 --> 00:10:16,790

remember if nobody volunteers this is

246

00:10:21,189 --> 00:10:18,919

not going to happen so we've had ten

247

00:10:24,759 --> 00:10:21,199

years running here pretty good it'd be a

248

00:10:27,879 --> 00:10:24,769

shame if it did not happen so get

249

00:10:31,239 --> 00:10:27,889

together make it happen find some people

250

00:10:36,609 --> 00:10:31,249

choose the site if I'm voting I'm going

251  
00:10:38,289 --> 00:10:36,619  
to choose either Hawaii or Spain so that

252  
00:10:41,590 --> 00:10:38,299  
would be awesome I know we have have

253  
00:10:45,009 --> 00:10:41,600  
these might actually happen we do have

254  
00:10:48,009 --> 00:10:45,019  
some people we know who might work at

255  
00:10:50,229 --> 00:10:48,019  
Hawaii that could host it there and some

256  
00:10:53,859 --> 00:10:50,239  
people from Spain were interested in

257  
00:10:57,129 --> 00:10:53,869  
hosting it there for our committee that

258  
00:10:58,400 --> 00:10:57,139  
we formed last year so maybe keep dreams

259  
00:11:01,960 --> 00:10:58,410  
alive

260  
00:11:04,840 --> 00:11:01,970  
and so exchanged emails find us and

261  
00:11:07,639 --> 00:11:04,850  
formed the committee and make it happen

262  
00:11:12,350 --> 00:11:07,649  
all right and that's it it's all I got

263  
00:11:19,429 --> 00:11:12,360

quick blurbs any uh you could clap if

264

00:11:24,019 --> 00:11:19,439

you want sure Eddie overall questions

265

00:11:26,749 --> 00:11:24,029

right now Oh Brett's got the link i'll

266

00:11:28,879 --> 00:11:26,759

just say is it yeah let's say is a

267

00:11:30,530 --> 00:11:28,889

previous organizer Thank You Bradley and

268

00:11:34,009 --> 00:11:30,540

the organizing committee for doing it

269

00:11:36,019 --> 00:11:34,019

this year for us and it is a good

270

00:11:38,449 --> 00:11:36,029

experience overall it's great to have on

271

00:11:41,439 --> 00:11:38,459

your CV it gives you a lot of

272

00:11:45,160 --> 00:11:41,449

appreciation for administrative support

273

00:11:48,559 --> 00:11:45,170

and one other thing I will say is that

274

00:11:51,110 --> 00:11:48,569

over the last few years we've kind of

275

00:11:52,819 --> 00:11:51,120

established a pattern where like we have

276

00:11:55,309 --> 00:11:52,829

it in the US one year and then maybe

277

00:11:56,449 --> 00:11:55,319

outside the US and inside the US and so

278

00:11:58,850 --> 00:11:56,459

there have been other there is a

279

00:12:01,400 --> 00:11:58,860

precedent set for having a brad khan

280

00:12:02,540 --> 00:12:01,410

outside of the US i mean obviously you

281

00:12:04,790 --> 00:12:02,550

need to have people on the ground that

282

00:12:06,139 --> 00:12:04,800

are organizing but yeah this spain thing

283

00:12:08,420 --> 00:12:06,149

has been talked about for a few years

284

00:12:11,929 --> 00:12:08,430

now i think it might be the right time

285

00:12:14,240 --> 00:12:11,939

to do it yes I what Tim said there is

286

00:12:16,910 --> 00:12:14,250

exactly right so Kristen and I doing

287

00:12:19,280 --> 00:12:16,920

this it became like minor MVPs of our

288

00:12:21,679 --> 00:12:19,290

little team here for doing it they're

289

00:12:24,670 --> 00:12:21,689

very excited your pies will love you if

290

00:12:28,249 --> 00:12:24,680

you bring a conference to your school

291

00:12:37,129 --> 00:12:28,259

uh-huh yep and we're both up for renewal

292

00:12:39,670 --> 00:12:37,139

right now our schools are is AB guy can

293

00:12:42,230 --> 00:12:39,680

always this time of year like late July

294

00:12:43,720 --> 00:12:42,240

it's it's typically been in the summer

295

00:12:46,579 --> 00:12:43,730

months as it's easier for the grad

296

00:12:49,370 --> 00:12:46,589

students to travel there one thing is a

297

00:12:52,269 --> 00:12:49,380

we have partnered it with apps icon

298

00:12:56,269 --> 00:12:52,279

before an AB site cons happening june

299

00:12:58,519 --> 00:12:56,279

it's happening june next year in chicago

300

00:13:00,319 --> 00:12:58,529

so it is possible that the organizers

301

00:13:03,860 --> 00:13:00,329

will decide to pair it up find somebody

302

00:13:07,639 --> 00:13:03,870

local and attach it either before after

303

00:13:08,780 --> 00:13:07,649

apps icon in june but we do typically in

304

00:13:17,180 --> 00:13:08,790

for the summer months