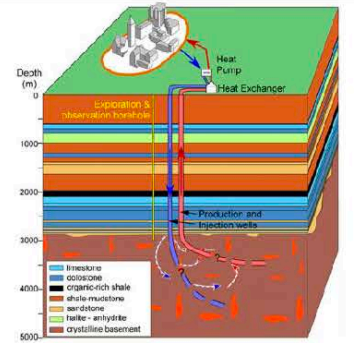


**Report on the short-term overseas study program  
for KU Engineering students  
Graduate School of Engineering, Kyoto University**

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Department/ Undergraduate School:	Department of Urban Management	Grade:	M2
Main body:	<p>This report describes that my study trip to Cornell university for 14 days. My destination was Cornell university in Ithaca, NY state. The reason why I chose this university is that Cornell university has one big project: CUBO stands for Cornell university borehole observatory project. This project drills 3000 m borehole in Cornell campus. The reason why they drill borehole is to understand subsurface rock conditions and heat output for building enhanced geothermal system to warm campus (Fig. 1). Now, they use natural gas to warm building. By this project, they build this system and use underground heat source to warm. They conduct this project for studies of subsurface and global environment. I'm interested in this project and one of this project scientists is Patrick Fulton, an acquaintance of my professor. That's why I chose Cornell university as my destination. Fig. 2 shows Dr. Fulton (the middle person) and Ivan (the left person) Ivan is my tutor and majors thermal property of rocks and transport of subsurface heat and fluid, so his major is almost same with me. They helped me a lot in this stay. I had 2 task in this stay, one is estimation of true formation temperature at bottom of CUBO borehole and the other is recommendation of measurement of drilling cuttings by presentation of my study in</p>		

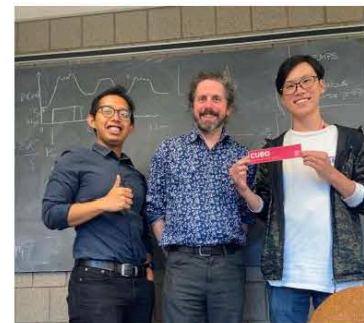
Fig.1



Jordan et al. (2020)

Schematic of EGS in the campus

Fig.2



Kyoto university because they got a lot of drilling cuttings from the borehole.

First, I estimated true formation temperature at bottom of borehole by using Horner plot. Horner plot is an empirical method and has been conducted by Dowdle and Cobb (1975), Fertl and Wichmann (1977). I used 3 measured temperatures, circulation time and each time since circulation stopped. I plotted log value and temperature, then I calculated regression line. Finally, I found formation temperature from the intercept of the line. Fig. 3 shows the result, I found that formation temperature is 88.3 °C. However, my tutor and I found some errors about measured temperatures and guessed the reasons are speed of logging is too fast to record temperatures and measurements were conducted before equilibrium. Therefore, data have some technical errors, so we guess true formation temp. is higher.

Second, I participated the seminar in Cornell and did presentation of my study in Kyoto university in front of Cornell students and professors. Then, I got a lot of question, Q&A time was so tough because professor's talking speed was too fast to listen to for me. I couldn't understand at all. I asked my host professor and tutor's helps and they helped me a lot. From this experience, I found that I need more listening skill. That's a big issue for me.

This stay was totally exciting and wonderful. My professor helped me to get the scholarship and contact with Dr. Fulton. I appreciate those helps from my professor and the involved parties of the scholarship.

Fig.3

