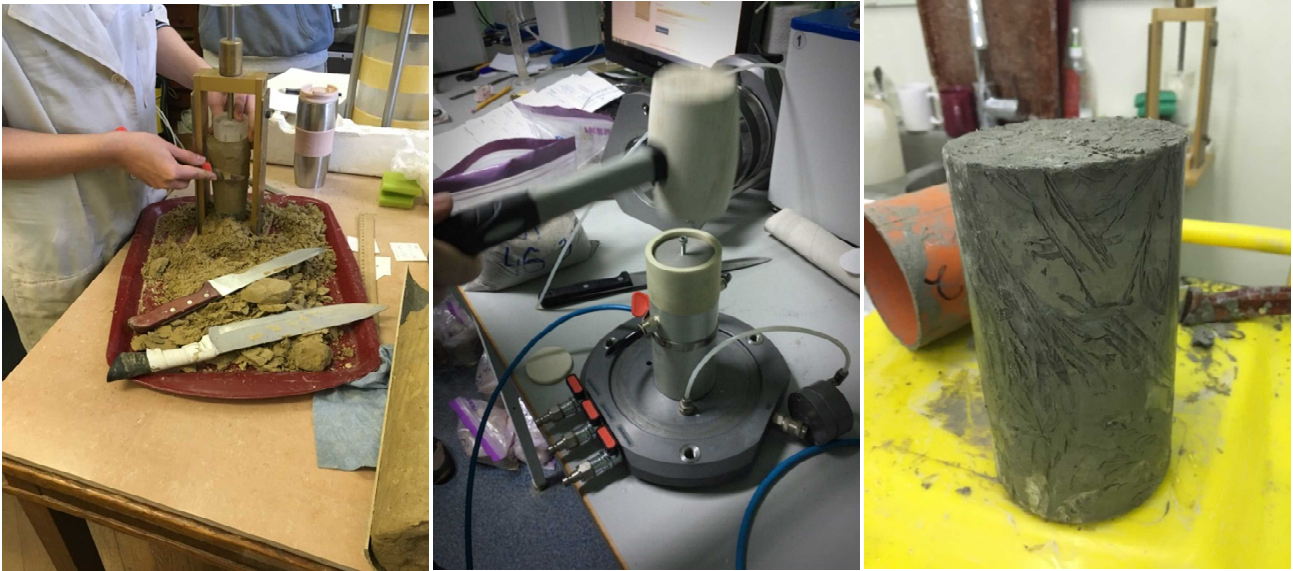


STEPS Students Report

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In Russia, I was accepted and joined in a laboratory in the Department of Geology, where I studied the methodologies of laboratory geomaterial tests. During my stay in Russia, I helped conduct three types of soil element tests: 1. Simple shear tests, 2. Triaxial tests, 3. Resonant column tests. In these tests, I learned of three ways of molding the samples as shown in the pictures below.



The first case was by cutting the samples taken from the sites by a corn sampler into shape with a knife. This case is effective to lessen the disturbance of the sample. The second case was by tamping, which was used in the case when the soil needed to be high density because the sampling point of the sand was of great depth. The third case was to freeze the sample. In this case, the advantage is that it is easier to make the sample stand when setting the sample on to the test machine. The disadvantage on the other hand is that there is a possibility that the sample will crush due to the unbalance of the water content inside the sample. When there is unbalance in the water content, the side with too much water will crush when the test is conducted and the soil is saturated. In Japan, I had only experienced the air drop method which is a standard method in Japan, so it was a good experience to know other methods. Cutting the samples into shape is a standard method in Russia, which I used in all three experiments I conducted during my stay. Simple shear tests are tests that measure the shear stress strength by giving shear

stress under a state with vertical strength to the specimen. By measuring the maximum shear strength of a few samples, it is possible to draw a shear stress- vertical stress graph, from which cohesion and friction angle, both of which are important factors to know the strength of soil, can be derived. This test is done all over the world, but the instrument for consolidation was one which I had not seen before, which was interesting for me (picture below).



In the Triaxial test, we conducted some CU tests with some clay soil from Hungary where a construction of a station is being planned. The basic idea of the test was to measure the strength of the soil in: 1. Isotropic state of stress (assuming no stress on the construction site), 2. State with unload of stress (assuming excavation of soil in the construction site), 3. State with load of stress (assuming loads of buildings

constructed on the site), 4. State of repetition of loading (assuming loads occurring from vehicles passing, etc.). The procedures were mostly the same as methods in Japan, but it was interesting to know the background of the soil used for the experiments. The resonant column test was a test where we give small torsion to the sample, and derive shear modulus, damping ratio from the shear wave velocity and density measured. It was a pity that I could not analyze the results due to the short period of stay, but it was good study for me to understand the big picture of the experiments conducted at a foreign university.

Other than the experiments in the laboratory, I had the chance to join some Japanese classes in Moscow States University in the psychology department, taught by a Russian teacher (picture below on the left). In the lesson, the students were learning about usage of \sim したり、 \sim したり. During my stay I felt the difficulty of languages, since it was my first time to stay in a country where the main language is not English. In the case of Russian, some letters are similar to the English alphabet,



so it is easier to read and understand words similar to English. In the case of Japanese

neither the grammar nor the words are similar to English (or Russian) and I felt the difficulty to teach the difference of conjugation such as たり (したり) and だり (住んだり) or んだり (読んだり) and ったり (言ったり). In the text, there were some explanations of Japanese holidays and it was good that I could teach some traditions in New year, and add information that that the day of mountains (山の日) was introduced this year.



Another cultural experience I had was listening to a conference of Japan-Russia interaction held at the university, where I listened to a session about Russian and Japanese ballet (picture below on the right). A Japanese ballet dancer who performed ballet from the times of the Soviet Union talked about ballet of the past and present. In the Soviet times, the passion for dancing and expressing life was regarded as important, but recently times have changed and as people have become more wealthy, and started regarding good clothes, good cars, good houses, etc., as important things, appearance has become something more important compared to the feelings and passion for dancing. This could also be said in Japanese ballet, where contests are important, and the technique and systematic moves for getting higher points is being emphasized. I don't do any music or dancing, but I felt that this could also be said for other situations as well, such as languages. For example, I noticed that Russian people are not very good at English (at least using correct English), but they have the intention to try and speak and let others understand their feelings. On the other hand, maybe Japanese people try too hard to use correct English, resulting to situations where they give up or become shy when they can't say something in the correct grammar in English. I also had the chance to meet some Japanese students learning piano in Russia, and I felt the same thing talking with them as well. They told me that in Russian conservatories, the teacher always asks them what it is that they want to express to the audience, and that it is different and fascinating compared to Japan.

Overall I had many positive experiences both academically and culturally, and I would like to thank everyone who helped me along in this program.