

FGL COMMUNITY NEWSLETTER

WINTER 2020-2021

WINTERFUL



It's 2021...

The year 2020 was a challenging year for all. Many struggled to work and study from home, or travel to Japan for in-person classes, which were unfortunately and unavoidably canceled. But, we made it to the end! Let's take time to leave all the bad things behind and look forward to the brand new year. We wish you a happy, healthy, and fulfilling 2021!

... And it's cold

This year's winter seemed to bring in all the snow that was amiss from last winter. Snowy roads, slippery walkways, and most importantly, snowball wars are the way of this winter.

おつかれ to our CO people!

As a result of the coronavirus pandemic, the classes at Tohoku University are being held online. The freshmen continue to struggle to come to Sendai as the borders are closed and flights are canceled. But as of December, 7 freshmen have arrived in Sendai. They are taking in-person classes along with the others! The classes have become hybrid, utilizing a variety of technologies to maximize productivity of all students. We are more than excited to welcome all of you in the future!

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2020 RECAP

NOBEL PRIZE WINNERS

While most of us are overwhelmed with news, information and stress resulted from environmental shift. We might have missed some great things that happened along the way. Fortunately, the Nobel Prize committee continues to operate as usual. They have announced 2020's winners in many fields. We introduce three of them in this newsletter.

PHYSICS

"Black Holes and the Milky Way's Darkest secret"

Written by Wu Wei Wei

In 2020, the Nobel Prize in Physics was awarded one half to Roger Penrose and the other half jointly to Reinhard Genzel and Andreas Ghez for their contribution in the field of the study of the black hole.

The discovery of Penrose is that black hole formation is a robust prediction of the general theory of relativity. In the past, scientists could only solve the calculation of the black hole based on several assumptions such as spherical symmetry, as the nonlinear partial differential equations in the general theory of relativity are extremely hard to solve. However, Penrose solved the problem by introducing Penrose diagram and proved that the black hole can form even if it is not spherically symmetrical. Furthermore, Penrose and Hawking also introduced Penrose-Hawking singularity to explain the formation of singularity in a black hole.



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The discovery of Genzel and Ghez is the existence of a supermassive compact object at the center of our galaxy. Since the last century, astronomers have started to find some celestial bodies that emit radio waves, which are called quasars. One of the quasars 3C273 was found at the center of another galaxy. At first, the scientists assumed it is a star several million times larger than our sun. However, based on the Eddington limit, it is impossible to have such a big star. As a result, the scientists gradually changed their predictions to assume that there is a supermassive black hole at the center of each galaxy. Genzel and Ghez's team observed a center of the galaxy that is 25000 light-years far from the earth for thirty years and successfully proved that there is indeed a supermassive black hole at the center of a galaxy.

<https://www.thenewslens.com/article/141758/>
<https://www.nobelprize.org/prizes/physics/2020/summary/>

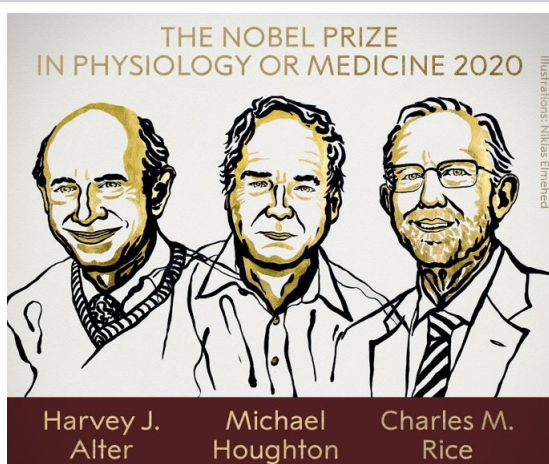
2020 RECAP

NOBEL PRIZE WINNERS

Medical

“The Discovery of Hepatitis C Virus”

Written by Sarika Otsuka



Previously only known as non-A non-B hepatitis, hepatitis C was discovered by Harvey J. Alter, Michael Houghton and Charles M. Rice last year. For their discovery, they were jointly awarded the Nobel Prize in Physiology Medicine for the year 2020. Hepatitis C infects only humans and chimpanzees. Symptoms of this disease include poor appetite, jaundice, fatigue, and vomiting. Long term effects are cirrhosis and liver cancer. The disease causing virus is commonly known as HCV or hepatitis C virus. It spreads by blood-to-blood contact due to sharing of needles, unsterilized or poorly sterilized apparatus, mother to baby and during blood transfusions. Symptoms may lie dormant for a very long time before fatal complications develop rapidly.

<https://www.nobelprize.org/prizes/medicine/2020/advanced-information/>

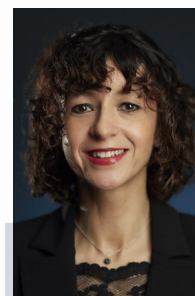
<https://news.cgtn.com/news/2020-10-05/Three-scientists-awarded-2020-Nobel-Prize-in-Physiology-or-Medicine--UJjaH5fcdO/index.html>

The three prize winners characterized this as a RNA virus from the Flavivirus family. Their work helped develop screening methods to identify this virus. This has led to the decrease of acquiring the disease from contaminated blood and development of medicine against it. The way it is screened is that the blood from a probable patient is drawn and is tested for antibodies or the viral RNA. And to prevent future spreading, usage of sterilized needles and testing donated blood is key. Treatments available are the medicines that are being developed or entire liver transplants. A big thanks to these three great biologists.

Chemistry

“CRISPR/Cas9 genetic scissors”

Written by Carlos Baptista



Emmanuelle Charpentier (left) and Jennifer A. Doudna (right) were awarded for their discovery of the gene editing tools: the CRISPR/Cas9 genetic scissors. It detects the targeted DNA sequence, cuts it, and replaces it with a new sequence of desired property. This technology allows gene modification with tremendous precision compared to other techniques. Future application allows the possibility of cancer therapy or even treating inherited diseases.

Welcoming the winter with snow sports

This winter is extraordinary

Five consecutive days of heavy snowfall marked the beginning of the winter in the city of Sendai. Tohoku University, especially Aobayama campus, was covered in snow so thick that people could ski down the dormitory hill. This winter is notably colder than several of the previous years with record-breaking snowfall, making up for all the snow that seemed to have gone AWOL from last winter. For the perspective of living with snow, it may seem hard as we have to walk through cold, slippery roads for daily duties outside. But for sports, this winter was and is very exciting.



Photo by [Chris F](#) from [Pexels](#)

There are several sports that we can do during winter. For example: ski, snowboarding, and winter hiking are very popular among people of all ages. As of last year, there was unexpectedly low amount of snow, people are now craving for trips to ski resorts. Unfortunately, we were all unavoidably hit by the pandemic. Even though it may be hard to have fun with the snow in this wonderful winter, we would like to share with you some information about these snow sports, the joy of them, and to prepare you for the next winter.

Experience the Flow: Snowboard and Ski

Snowboarding and skiing are torturous for first-timers and beginners. It is as difficult as Hamlet's "to be or not to be". Skiing is closer to the posture of everyday walking, as long as the legs are clamped, standing on the board, you can carry out a simple glide. However, do not try to go down the slope without mastering the method to brake, or you will become a "snow torpedo".



Photo by [Volker Meyer](#) from [Pexels](#)

On the other hand, snowboarding uses an unfamiliar sideways sliding position, so it is easier to turn around and fall. However, novice snowboarders go through a series of tests such as not being able to stand up, falling backwards, slamming down on chests, twisting wrists, etc., in order to gain balance. There are also subtle differences between falling while skiing and snowboarding: you fall backwards to a sitting position on the skis and sometimes forwards. Common cases of splitting your legs occur (Ouch!). You fall to the side of the propagated direction when you snowboard.

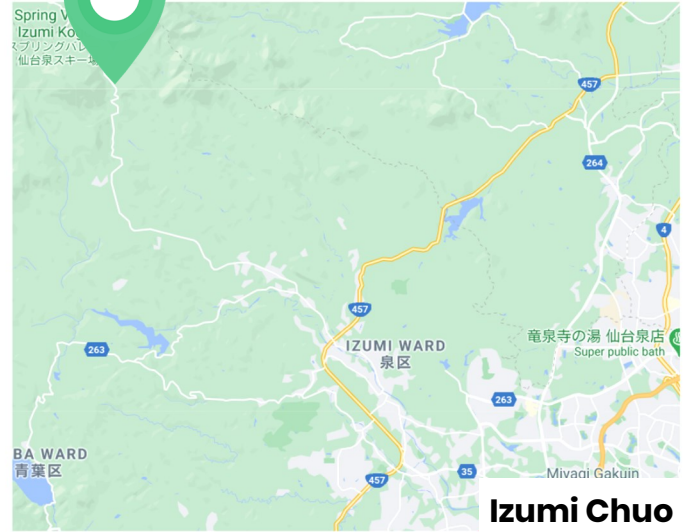
To put it simply, it's hard to get started with skiing, but easy to advance; it's easy to get started on a snowboard, but hard to advance.

So when you come to Japan, don't miss the opportunities to snowboard and ski, you can have nice in-action photos without looking awkward in just one day!

Winter Sport places near Sendai

Spring valley snow park

Spring Valley Snow Park is a ski resort that is suitable for beginners, as well as intermediate and advanced skier. This small resort is cheap and easily accessible by bus that you can take from Izumi Chuo Station.



Zao Onsen Ski resort

This is one of the most popular places for both skiing and snowboarding. Tourists from all directions come to watch the "snow monster" or 「樹氷」 (Juhyou). You can enjoy rides with these snow monsters along the way. It is easily accessible by a bus you can take from Sendai station. This resort is for those with more advanced skill, so it would be worth your time if you were an intermediate skier.



Sendai Station



Sumikawa Snow park

This is heaven for "crazy" skiers and snowboarders. It has several ramps, pipes, and boxes for you to jump over and play tricks. It is also relatively cheap and therefore popular among university students. This resort can easily be accessed via a bus from the Sendai Station.

Zao Shiroishi ski resort.

This resort is iconic as it is the only resort that you can see from trains. It is also the most beginner-friendly and the cheapest. We recommend you start your first skiing or snowboarding experience here. Yet again, you can access this resort via a bus from JR Shiroishi Station which is 30 minutes from Sendai Station.

Overlooking the whole white scenery: Snow Hiking



In Japan, it is common to see snow in the Tohoku region. However, this may be your first time seeing real snow since your birth. To enjoy the beautiful view as much as you can, snow hiking is one of the winter sports you could choose.

To enjoy snow hiking, there is quite the amount of equipment you will need and preparation you will have to do. For example, you will need footwear, hats, gloves, jackets, pants, thermal clothing, spare clothing, map, compass, first aid kit, and so on. Bringing the necessary tools is very important to ensure your personal safety, for winter hiking is dangerous, especially if you don't have proper apparatus and stock to keep you from being cold and hungry. It is recommended to do some search online to collect enough information. Also, be sure to ask some friends to accompany you when doing the snow hiking because you can help each other when facing problems.

After preparing proper gear, it is time for us to choose the places for hiking. As a beginner, we had better choose those mountains that are relatively easy to hike. For instance,

権現森(ごうげんもり) , 蕃山(ばんさん), and 蛤山(はまぐりやま) are recommended for beginners. If you are already experienced, you can also choose the mountains that are for experienced people. For example, 神室岳(かむろうだけ), and 雁戸山(がんとさん) are suitable for those who want to challenge themselves more. Finally, never forget to check the weather when planning the trip. We wish all of you can have a nice experience with snow hiking.

Relaxation: Japanese Onsen and Its Traditions

Written by
Carlos Baptista

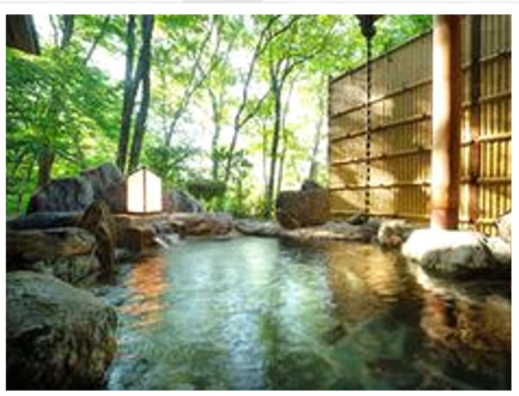
If you want an experience like no other for your bragging arsenal when you go back to your home country, then going to an onsen should be your primary choice. A tale about making new friends while taking a bath will surely make you the star in your next high school reunion party. Even though the last statement was a little bit weird, onsen is considered by many foreigners a must try in Japan for good reasons.

Onsen (温泉), literally means hot spring, refers to natural hot spring bath which is very popular across Japan due to its array of active volcanoes. This communal bathing tradition has gone a long way since the second half of the first century and is very well known because of their therapeutic properties.



Onsen Etiquettes

1. Inside the locker room, you put all your belongings and take off all your clothing before entering the onsen. Do not be embarrassed of being totally naked because the Japanese do not give a second thought about it. You will blend right in.
2. Before jumping (do not) into the hot spring pool, remember to **take a shower** thoroughly in the individual faucets area.
3. You should not enter the water with any bathing suit or underwear.



Recommended places

1. **Ginzan Onsen**, if you've watched "Spirited Away", this place will be your wonderland as this small town was the inspiration of this amazing animation.
2. **Akiu Onsen**, is a hot-spring town located in the low mountains of Western Sendai with a variety of onsens from easy-going to elegant.
3. **Sakunami Onsen**, with amazing landscapes of lush pine, maple forests, and rocky banks, your outdoor onsen experience will be unforgettable.
4. **Naruko Onsen**, hidden in the north west of Miyagi, is one of the richest, most immersive onsen experiences that provide water with different sensations.
5. **Matsushima Onsen**, decorated with the top three greatest views of Japan, the Matsushima area provides amazing scenery.
6. **Togatta Onsen**, in the foothills of Mount Zao, is a compact attraction from culinary to winter sports.

Updates, Events & Activities

News & Updates

On February 13th, 11:08 P.M., almost an hour before Valentine's day, a considerably large earthquake struck near Fukushima Prefecture with a magnitude of 7.3. The shaking was felt by everyone in the Tohoku region and as far as Tokyo. Analysis showed that the quake was an aftershock of the 2011 Event. We hope you stay safe and sound.

Regarding COVID-19 Situation, the number of new daily infections has shown a decrease, which is good news. Additionally, vaccine distribution has started since February 17. For more information, please refer to Tohoku University's update [here](#).



Contact Us

We are resuming the social activities soon. Stay tuned for more information and updates regarding our programs and events!



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Photo by cottonbro from Pexels

FGL Activity Column

Ongoing Admission

During this time, the entrance examinations for the future C1 FGL Batch will be held online around the world. We are excited to hear the results, and to welcome them in the future!

Looking Forward.

As the vaccine has now been approved and will be distributed, more and more flights will be opened. We are looking forward to welcoming the C0 Students soon in the next semester starting from April.

Spring Events.

From spring, things will start going back to normal. We are planning several online gatherings in the future, And an official welcome party after all the students arrive in Sendai. And also, [Stay tuned for the recruitment announcement for the FGL community committee in the future.](#) We are looking forward to having you onboard!