



# Hokkaido University Times

## Contents

HU Ambassador wins the 2017 Volvo Environmental Prize .....	1
Hokudai Marche Cafe and Labo .....	2
Hokkaido University awarded Certificate of Excellence by TripAdvisor .....	2
30th Agreement Anniversary with University of Science and Technology Beijing .....	3
HSI 2018 courses finalized .....	3
Japan–Russia Youth Forum 2017 held at Hokkaido University .....	4
Spotlight on Research: I eat, therefore I am .....	4-5
Spotlight on Research: Do horses factor in empathy and fairness in their decisions? .....	6-7
Press release: Strong hosts help parasites spread farther .....	8
Press release: Nodding raises likability and approachability .....	9
Fall Flashback .....	10

### Cover photo:

Sapporo Campus in the winter.

## HU Ambassador wins the 2017 Volvo Environmental Prize

Professor Rashid Sumaila, Director of the Fisheries Economics Research Unit at the University of British Columbia in Canada, and Hokkaido University Ambassador, received the 2017 Volvo Environmental Prize on Nov. 29th for his research and contributions protecting the oceans and its marine life.

The Volvo Environmental Prize is one of the scientific world's most respected prizes for environmental and sustainability studies. The prize foundation is based in Sweden, where one internationally renowned scientist is selected each year for their efforts or discoveries towards the betterment of the environment.

Professor Rashid Sumaila's research focuses on restoring the sustainability of the oceans. Once seen as an infinite supply of resources, the oceans have been experiencing a decrease in biological diversity due to overfishing, overexploitation, and pollution, and Professor Sumaila has taken up the cause to improve this situation.



An example of this can be seen in an interview run by the prize foundation, where it was stated that Professor Sumaila and his team found there is around 50% more fish being caught than reported. To address this, Professor Sumaila has proposed a fishing ban across the high seas, which cover roughly two-thirds of the ocean. He has also called for people to more carefully consider how subsidies are being spent and whether they are contributing to the overexploitation of the ocean's resources.

His proposal to ban fishing in the high seas, initially seen as extreme, has gained international attention. His ideas have been presented at the United Nations, the Global Ocean Commission, and the American Association for the Advancement of Sciences.





## Hokudai Marche Cafe and Labo

The grand opening for “Hokudai Marche Cafe and Labo,” located at [Centennial Hall](#) only a minute away from the university’s Main Gate, was last month. The restaurant is manned by students and alumni of the university and has a small factory attached which processes raw milk from the university to make pasteurized milk and mozzarella cheese. It also has a small shop where you can purchase ice cream, coffee, sweets, and vegetables produced at the university or nearby farms.

Enjoy locally produced milk, delicious food, and fresh Hokkaido-grown and made products in a calm cafe surrounded by trees.



## Hokkaido University awarded Certificate of Excellence by TripAdvisor

This Fall, the Sapporo Campus was awarded a Certificate of Excellence by TripAdvisor, one of the world’s largest travel sites that travellers often contribute to to provide reviews and opinions on accommodations, attractions, restaurants, etc.

The Certificate of Excellence takes into account the quality, quantity and recency of reviews submitted by travelers on TripAdvisor over a 12-month period. To qualify for the award, a business must maintain an overall TripAdvisor bubble rating of at least four out of five, have a minimum number of reviews and must have been listed on TripAdvisor for at least 12 months.

Hokkaido University is considered one of the most beautiful campuses in Japan, and it is with great pride that the university accepts this award.



## 30th Agreement Anniversary with University of Science and Technology Beijing

Hokkaido University hosted a ceremony to celebrate the 30th anniversary of the signing of the Inter-University Exchange Agreement between HU and the University of Science and Technology Beijing (USTB) at the Faculty of Engineering’s Open Hall on August 29th, 2017. Over one hundred participants including ten guests from USTB joined this ceremony and celebrated the anniversary together.

USTB and HU signed an Academic Exchange Agreement and Memorandum of Understanding on Student Exchange in 1986. It is the longest standing agreement HU has among universities in China. Since the signing, the two universities have alternated on hosting joint symposiums, this being the 15th time. Emeritus Professor Heishichiro Takahashi from HU and Professor Benfu Hu from USTB were awarded for their significant contributions to collaborations between HU and USTB over the past 30 years.

### Collaboration timeline:

- **Dec. 26, 1986:** Academic Exchange Agreement between HU and USTB
- **Aug. 1987:** 1st Joint Symposium was held at HU
- **2002:** President of HU attended the 50th anniversary of USTB
- **Nov. 2005:** Establishment of International Collaboration Offices at both universities.
- **2012:** President of HU attended the 60th anniversary of USTB
- **Aug. 2017:** 30th anniversary and 15th Joint Symposium at HU



## HSI 2018 courses finalized!

**Online application acceptance period**  
Open: February 1 (Thu.), 2018, 0:00 a.m.  
Close: February 28 (Wed.), 2018, 5:00 p.m.  
All times in Japanese Standard Time.

Visit the [HSI website](#) for more information.





## Japan–Russia Youth Forum 2017

The Japan–Russia Youth Forum 2017, hosted by the Japan–Russia Youth Exchange Center, Russian International Youth Center and Hokkaido University, was held on campus for the first time in ten years on Nov. 20th and 21st, 2017.

The forum started in 2006 under the collaboration of the JapanRussia Youth Exchange Center and universities in Japan. Its purpose is to enable youth from Russia and Japan who will lead the next generation to address the various problems facing both countries through frank heart-to-heart discussions.

30 Japanese students from 20 universities in Japan (including 8 from Hokkaido University) and 26 young Russians from 20 Russian associations and institutions participated to discuss the general theme of the event “Inter-Regional Collaboration for the Expansion of Economic and Human Interactions.” They also discussed topics surrounding

“Regional Redevelopment and Revitalization,” “Multicultural society and Cultural Diversity,” and “Tourism, Transportation and Logistics” in an afternoon group session.

The welcome party in the evening provided ample opportunities for the participants to enjoy various delicacies and chat with each other. The folk group “Wadachi” also performed at the party.

On the morning of 21st, in groups the students gave presentations about future relations between Russia and Japan. Later on during the closing ceremony, Executive and Vice President Nishii Junji gave the closing address and handed certifications to the participants.

The young participants made friendships transcending boundaries at the forum. Their collaborations allow for brighter future relationships between Japan and Russia.

## Spotlight on Research: Dr. Emma Cook

### I eat, therefore I am

Food is a central part of our everyday lives, and the sociality of food is something which defines cultures worldwide. Now, imagine you are unable to safely consume a number of different foodstuffs, that you have food allergies. How would this affect your lifestyle, mentality, and relationships?

A food allergy (not to be confused with a food intolerance) is an overresponse of the immune system when the body mistakes an ingested foodstuff as harmful, causing a physiological reaction, such as swelling of the lips and airways. This can lead to anaphylaxis, which in turn can lead to anaphylactic shock and even death. The underlying cause of food allergies is unknown, although recent research suggests the development of allergies may be related to limited microbial diversity in the gut.

Food allergies are on the rise across the industrialized world, yet there doesn't seem to be a widespread awareness of what they are and how they affect

people's lives. Dr. Emma Cook of the Graduate School of Media and Communication is a social anthropologist currently studying how living with food allergies in Japan and the U.K. affects one's experiences and wellbeing, loved ones, and friends. She looks at adults and teenagers who have had food allergies since they were children, those who developed them later on, and the parents of children with food allergies.

Parents who have children with food allergies have a great responsibility to not only keep their child safe, but also factor in their child's social life. Take school lunches in Japan for example. They take place in the classroom and are considered an integral part of the day to develop good nutrition, eating habits, and social behaviors. If living in a prefecture that doesn't provide special lunches for kids with food allergies, parents need to check the lunch menu in advance to determine which days are unsafe for their child so they can send them to school with similar looking food that can be placed onto their lunch tray.

Dr. Cook works closely with an NPO in Tokyo called ATOPICCO Network for Children of the Earth to conduct participant observation, ethnographic fieldwork and interviews. She also attends ATOPICCO's annual summer camp for kids with food allergies. This camp is advertised as a place where children are able to eat the same food as everyone else, and workshops and information seminars are held alongside for the parents. Dr. Cook can recall the impact the first summer camp she attended had on her:

“All of the parents introduced each other starting with their child's allergy. Some people would cry as a sort of relief that they're in a room with people who don't judge them and share the same experience. I didn't realize how emotionally tiring it is until I saw this... It's not been long since the Great East Japan Earthquake and the Kumamoto earthquake and so there's also a huge amount of stress

related to how to feed their kids during a natural disaster.”

Since allergies are understood by the general public in different ways from country to country, how people manage and view their allergies, and as such how people experience food allergies, varies. According to Dr. Cook, in the U.K. many allergy sufferers view it more as a condition, whereas in Japan it's understood more in terms of an illness. Some children with allergies also have the option to undergo oral immunotherapy treatment (OIT) and, in some places, medical trials to try and increase their tolerance for the allergen to reduce the risk of a severe anaphylactic reaction. All of these factors affect the daily lives, mindset, and quality of life of everyone involved.

Food allergies also tend to create a gender divide. In both Japan and the U.K., even in households that had an equal gender distribution of household labor, once a child develops a food allergy it's the mother who usually ends up interacting with doctors, schools, other parents, and managing their child's allergies.

Considering how central food is to how we socialize, there needs to be a better understanding

of its social implications. Dr. Cook plans to finish the last of her interviews next year. After she finishes transcribing the data and analyzing it, it'll be interesting to see her conclusions on the ways in which food allergies affect people according to the different customs and social behaviors in Japan and the U.K.

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One of the dishes offered at the ATOPICCO camp



Spotlight on Research: Dr. Ayaka Takimoto



Do horses factor in empathy and fairness in their decisions?

Animals cooperate and help each other through big and small situations on a daily basis. How cooperative behaviors and tendencies change in humans throughout our lifetimes may be a fairly commonly studied subject, but how do these social behaviors change over time for other animals? Dr. Ayaka Takimoto with the Graduate School of Letters looks to answer this question. Her research focuses on the evolution of pro-sociality, or cooperation, in social creatures (e.g. horses, monkeys, etc.), and she is particularly intrigued in the psychological mechanisms at work supporting these behaviors. Why is a horse’s mood influenced by the moods of those around them, and why do monkeys choose to share their food with certain monkeys and not others? Are empathy and fairness influencing these decisions?

The basis of Takimoto’s research comes from studying the behaviors of capuchin monkeys, which are native to Central and South America. Using a food box mechanism that allows one of the monkeys to choose whether to share food of high-value, her experiments showed that there is a tendency for monkeys to refrain from sharing

food with dominate members of their species unless they helped in obtaining it. Cross-comparison of the data with other studies on nonhuman primates also helped confirm that social animals tend to engage in friendly interactions with those who reciprocate kindness. However, this is not to say capuchin monkeys don’t share with more dominant monkeys. Especially considering they are highly social animals, dominant and subordinate monkeys still often share food with each other irregardless.

Takimoto’s current ongoing research examines how another social animal, horses, build social bonds with humans and other horses. The former is done in cooperation with Hokkaido University’s and the University of Tokyo’s Horse Riding Clubs and their Thoroughbred horses. One of the experiments combines visual and auditory elements to test the horses’ recognition of human emotions. For this experiment, images and sound-files of their caretakers and strangers were taken beforehand to create a more controlled experiment. The horses were then guided by helpers in front of a screen which would show either a happy or angry face. Afterwards, they would hear a voice either praising or scolding them. If the images and voices were consistent with each other (a positive image with a positive voice or a negative image with a negative voice), there usually was not a significant change in the horses’ response. However, if the images and voices were inconsistent, especially if they were that of their caretaker, they would become perplexed – shooting glances around

in what can be described as a sort of “Eh?” expression.

In south-eastern Hokkaido at Shizunai Farm, affiliated with the university’s Field Science Center for Northern Biosphere, Takimoto also studies the relationship between the native Hokkaido Horses living there. She plans to create diagrams illustrating the complex social network between the horses at the farm by observing their grooming habits, closeness to each other, food sharing behaviors, and aggressiveness. She hopes to find out why horses displaying a set of behaviors fit into certain groups, why horses react differently to certain horses, and the extent in which emotions influence these decisions.

“Generally, I think people feel that horses don’t have personalities. But, when I observe their behavior in groups, I see a very big variation. For example, there is this one very pro-social mother who breaks up fights between other mothers. There is also a mother who is very friendly to not just her own foals, but other foals too,” explained Takimoto.

The data from Takimoto’s studies will help bring to light the extent that emotions, such as empathy and fairness, influence the decisions of social animals. It also addresses whether pro-social behaviors in social animals are inherent or if they are learned over time from an animal’s experiences. In the future, Takimoto will also be building on one of her newer studies explaining behaviors and personalities in horses through DNA analyses. The results from her experiments may not only change our perception of social animals in general, but also positively affect their welfare by allowing us to more efficiently assign these animals—such as horses—to particular roles in society.

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Top: Horse at Shizunai Farm wondering why Makoto Tanifuji, an undergraduate student of the School of Letters, is taking observational footage.  
Bottom: Mother and foal at Shizunai Farm.



Press Release

# Strong hosts help parasites spread farther

Large, physically strong Masu salmon disperse farther when infected with parasites, potentially escaping from further infections at the contaminated site but ironically resulting in the greater expansion of the parasite, according to Hokkaido University researchers.

Infected hosts are the “vehicle” of sluggish parasites, and their dispersal behavior largely determines the extent parasites spread in nature. Dispersal is thought to be a rational behavior for infected hosts to escape from a parasite-contaminated habitat and avoid further infections. However, escaping from the contaminated habitat involves the alternative risk of using up energy and encountering natural enemies. How do infected hosts cope with this dilemma?

Researchers from Hokkaido University and the Hokkaido Research Organization hypothesized that only large, physically strong individuals may travel long distances to flee from a parasite, because the escape process is too risky for small, physically weak individuals.

To test this hypothesis, the researchers focused on the larval parasite of the freshwater mussel *Margaritifera laevis*, whose infection process is simple and experimentally controllable. *Margaritifera laevis* becomes parasitic on the gills of young Masu salmon after being released by its mother as larvae. The larvae infect the salmon for approximately 50 days, during which the parasites suck the host's blood and travel on the host to different locations. After their parasitic period, they develop into young mussels and start living at the bottom of mountain streams, expanding the species' distribution.

The researchers captured, marked and released 215 young Masu salmon in Osatsu stream (Hokkaido, Japan), half of which had been artificially infected with the larval parasite. They observed fish dispersal behavior in a 1,200-meter section of the stream and investigated how this changed according to their infection status and body size. The researchers also made a numerical simulation model to investigate how the dispersal of young Masu salmon would affect the persistence and expansion of the parasite.



Young Masu salmon, the host of *Margaritifera laevis*. The circled inset shows the gill of a Masu salmon infected with parasites. The white dots are larvae of the freshwater mussel.

As predicted, the experiments showed that large, physically stronger fish traveled farther while smaller fish tended to stay where they were; however, this dispersal behavior was not observed for uninfected fish. Thus, the team inferred the behavior was caused by the infection of the fish hosts. Importantly, this dispersal behavior that potentially favors the survival of “infected fish” resulted in undesired consequences for the “fish population” as a whole, including for uninfected fish. In their simulations, parasite populations persisted four times longer and invaded areas six times wider with the aid of the host's behavior. “The rational behavior of the larger salmon may have helped expand the infection area while smaller ones keep the infected habitat infectious,” says Akira Terui of the research team.

“Although individual Masu salmon seem to behave rationally, their actions have ironically resulted in the long-term persistence and greater expansion of its parasite. Further research on the species and other host-parasite relationships could help predictions of how diseases spread in wild animals,” Terui added.

**Original article:**

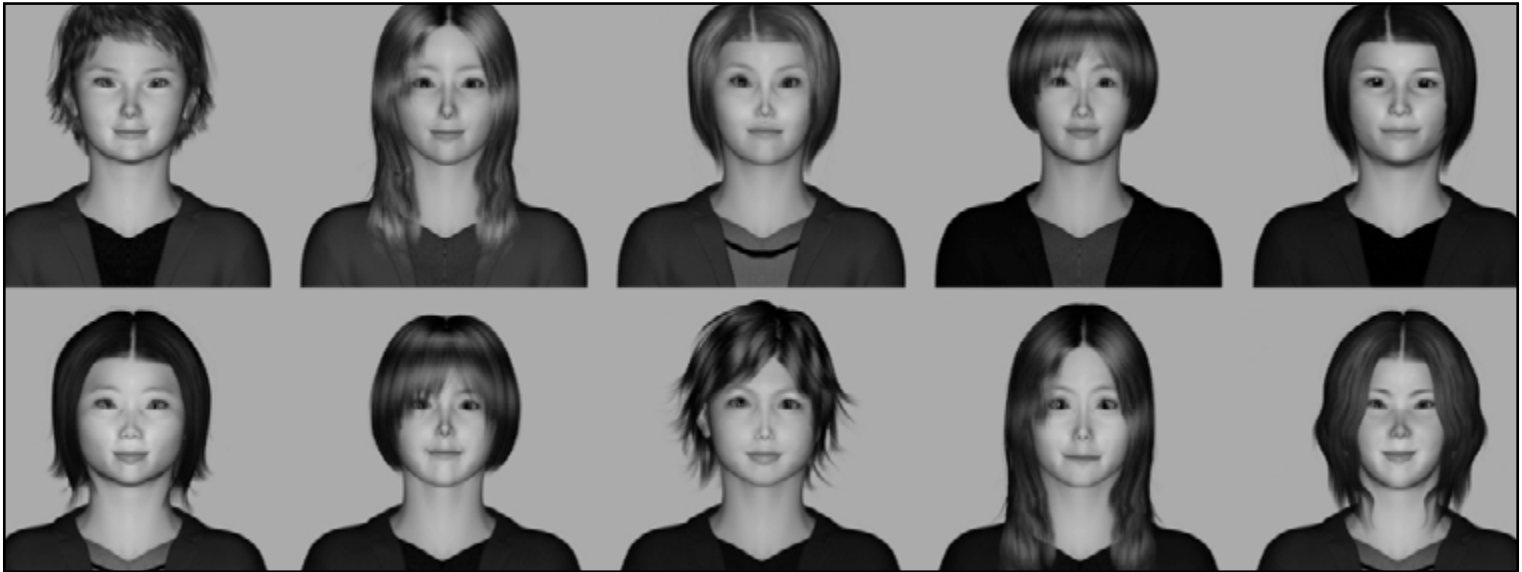
Terui A. et al., Parasite infection induces size-dependent host dispersal: consequences for parasite persistence, *Proceedings of the Royal Society B: Biological Sciences*, November 1, 2017. DOI: 10.1098/rspb.2017.1491

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**Background photo:**

A habitat of the fresh water mussel *Margaritifera laevis*.



Examples of 3D CG models used in the study.

Press Release

# Nodding raises likability and approachability

**The act of nodding positively affects the subjective likability of people by about 30 percent and their approachability by 40 percent, according to a study conducted by researchers from Hokkaido University and Yamagata University in Japan.**

In many countries, nodding is a communicative signal that means approval, and head shaking is a gesture of denial. Hokkaido University Associate Professor Jun-ichiro Kawahara and Yamagata University Associate Professor Takayuki Osugi previously demonstrated that the bowing motion of computer-generated, three-dimensional figures enhanced their perceived attractiveness. In their latest research, the team conducted experiments to rate how simple nodding and head shaking affects perceived trait impressions.

Short video clips of computer-generated figures nodding, shaking their head or staying motionless were shown to 49 Japanese men and women aged 18 years or older, who then rated the figures' attractiveness, likability and approachability on a scale of 0 to 100.

The researchers found the likability and the approachability of the nodding figures was about 30 percent higher and 40 percent higher respectively than that of figures shaking their heads or staying motionless. The results were similar for both the male and female observers. The head shaking motion did not influence the ratings for likability and

approachability. “Our study also demonstrated that nodding primarily increased likability attributable to personality traits, rather than to physical appearance,” Kawahara explained.

The study provides a useful empirical contribution to this field as it is the first to show that merely observing another's subtle head motions produced perceived positive attitudes. Their findings will likely be helpful in providing instructions about manners and hospitality as well as the evaluation of web-based avatars and humanoid robots. Kawahara emphasizes, however, “Generalizing these results requires a degree of caution because computer-generated female faces were used to manipulate head motions in our experiments. Further study involving male figures, real faces and observers from different cultural backgrounds, is needed to apply these findings to real-world situations.”

**Original article:**

Osugi T. and Kawahara J., Effects of head nodding and shaking motions on perceptions of likeability and approachability, *Perception*, September 24, 2017. DOI: 10.1177/0301006617733209

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## Fall Flashback



Photo: Like Hokudai



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