



# Hokkaido University Times

## FEATURED NEWS:

### Join the Hokkaido

### Summer Institute 2017



The Hokkaido Summer Institute (HSI), established in 2016 by Hokkaido University, is a program that brings together world-leading researchers and faculty members to provide an educational experience to students from across Japan and around the world. The HSI allows participants to expand their knowledge in subjects which the university is famous worldwide for. These classes used to just be open to students of the university, but now participants of the program will have the opportunity to attend these cutting-edge classes. Many classes are designed to concentrate on active learning. For example, some classes utilize field training in Hokkaido's vast landscape so that students may gain practical experience during their studies.

The base language of the HSI is English. Hokkaido University wants to provide a stress-free learning environment that allows participants to concentrate on their learning and not have to worry about language barriers. Off-campus events are also planned to give participants opportunities to enjoy Hokkaido's beautiful summer.

This summer between May 29<sup>th</sup> and September 1<sup>st</sup>, more than 140 researchers worldwide are being invited to teach around 100 courses. Applications to join the HSI are now being accepted until the 28th of February. Don't miss out on this unique opportunity! You need only be a current student of a university to apply. For more information, please visit the HSI website [here](#).



Featured Photo:  
Good morning from  
Hokkaido University!

## Key Dates

February 20<sup>th</sup>:  
[Sustainability and Ecology Seminar Talks](#)

February 27<sup>th</sup>:  
Deadline to apply for the Modern  
Japanese Studies Program (see p. 2)

February 28<sup>th</sup>:  
Deadline to apply for the Hokkaido  
Summer Institute, and International  
Soft Matter Summer School in  
Hokkaido (see p. 2)

March 4<sup>th</sup>:  
Hult Prize Regional Finals in San  
Francisco, Boston, and Shanghai  
(see p. 4)

## Introducing the Ambassador and Partner System



To expand our global network, the university began appointing ambassadors and partners via the Ambassador and Partner System from April 2016. These titles are granted to people who contribute toward the development of the university or its affiliated organizations. Ambassadors and partners play an important role in the university's community particularly by strengthening ties with its alumni associations. Activities also include advising Japanese students during their stay in the ambassadors' regions and providing information for local students wanting to study at Hokkaido University.

The university now has 11 ambassadors and 52 partners in more than 15 countries. Lately, there has been a focus on finding candidates and then appointing them, and creating a webpage for the university's ambassadors and partners. More news to come!

## Participate in the International Soft Matter Summer School in Hokkaido 2017

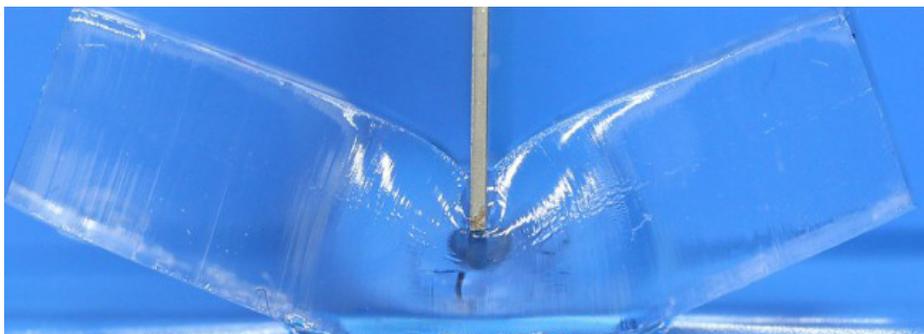
This summer the Global Station for Soft Matter, GI-CoRE, will be hosting a summer school in conjunction with the Hokkaido Summer Institute (see p. 1). This 2-week program, titled the International Soft Matter Summer School in Hokkaido 2017, focuses on polymer physics, soft matter mechanics, chemistry and characterization of materials. Graduate students and early career researchers are encouraged to apply. Registration is open until February 28th.

### Graduate students:

For more information on how to apply and on the courses, please refer to the summer school's website and the [Hokkaido Summer Institute](#).

### Early career researchers:

Please refer to the summer school's website [here](#) for more information.



## Enroll in our Undergraduate Programs in English



**Integrated Science Program**

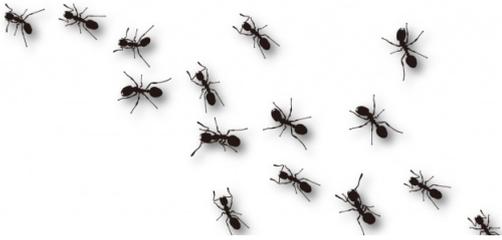


HOKKAIDO UNIVERSITY  
**Modern Japanese Studies Program**

The [Integrated Science Program](#) (ISP) is a cross-disciplinary educational program for international students interested in pursuing a degree in the sciences. The program fundamentally consists of a four-year Bachelor's degree and a two-year Master's degree. Hokkaido University has also put in place an advanced graduation initiative, meaning that highly motivated and capable students will have the opportunity to graduate from the Bachelor's and Master's components in 3.5 and 1.5 years, respectively.

The [Modern Japanese Studies Program](#) (MJSP) is a four-year Bachelor's Degree program in Japanese Studies. It is preceded by a six-month intensive Japanese language course for those with insufficient Japanese. There are two modules from which you can choose: 1) History and Culture and 2) Society and Political Economy. In the first 2-3 years, subjects are taught in English. Once you have sufficient Japanese, you will also take classes in Japanese in the faculties of Law, Letters, Education and Economics and Business Administration.

## FEATURED RESEARCH: Stabilizing evolutionary forces keep ants strong



**Hokkaido University researchers are finding evidence of natural selection that maintains the status quo among ant populations.**

A type of natural selection, called “stabilizing selection,” is thought to maintain functional characteristics in species. However, it is difficult to find evidence of this type of selection through research.

“Random genetic drift,” on the other hand, where genetic variations occur randomly over time, is an evolutionary process that affects characteristics under “weak selection,” implying that maintaining these characteristics is generally unimportant.

Hokkaido University researchers studied two ant species in Japan and Korea that were molecular-phylogenetically indiscriminate – thus they could be considered one species – and found evidence that there were different selection forces at play on different body parts.

The researchers first observed how ants use a tiny spur that projects from their legs. They found the front spurs were frequently used to clean the antennae, a major sensory organ in ants. By contrast, the hind spurs were only seldom used to scratch the back surface of the abdomen where no important organs were found.

The team assumed that natural selection forces would strongly affect the front spur, due to its relative importance and its special brush-shape as a cleaning organ. They also assumed that the less

functionally important hind spur would be relatively unaffected by natural selection forces.

The researchers found significant genetic differences between ten ant populations of the species, implying there is limited gene flow between them. They also found limited evidence of inbreeding within the populations. This means that any observed morphological differences within and between the populations would reflect how strongly natural selection acted on each character.

Comparing the spurs in the ant populations, they found significant variations in the lengths of the less important hind spurs, which corresponds to the random genetic drift that occurs over time. They also found a smaller degree of variation in the length of the front spur among and between the ant populations.

“Our results suggest that stabilizing selection is at play, maintaining these functionally important characteristics in each population, while less important characteristics have diversified over time,” says Eisuke Hasegawa, the corresponding author of the paper published in *Scientific Reports*, “Further investigations should help us understand the evolutionary forces that generate diversity and similarity among populations.”

### **Original paper:**

Imai S. et al., Difference in evolutionary patterns of strongly or weakly selected characters among ant populations. *Scientific Reports*, Dec 20, 2016.

## Recent Press Releases



Pure iron grains are rare in the universe

The nucleation of pure iron grains in interstellar space is actually incredibly rare.



New species discovered in Antarctica

A new species of worm was discovered 9-meters deep underwater in Antarctica.



Promiscuous lamprey found to conduct “sham matings”

Lampreys many times mate without releasing eggs in a behavior called sham mating.



Once-dried tributary serves as shelter for wintering fish

The importance of remnant tributaries in winter is shown through the migration of fish.



Mapping the migration of house shrews

Distribution of house shrews suggests wider trade network in the middle-modern ages.

## FEATURED EVENT: The winning team will compete for the Hult Prize

The Hult Prize is an annual international competition for student social entrepreneurship. The theme of the 2017 competition is "Reawakening Human Potential - The Refugee Opportunity."

Last December, the Campus Competition for the Hult Prize was held at Hokkaido University and its judging committee selected the winning teams which will move on to the regional competition this March. The winners of the regional competitions are then invited to attend the Clinton Global Initiative (CGI) in New York, where one million dollars will be awarded to the winning team.

One of the teams to represent Hokkaido University presented an idea which encourages people to invest money for the refugees. They plan to set up a crowd-funding scheme which collects money from the public and distributes the capital to NPOs and NGOs that



support refugees. An unique aspect of their plan is that the resettled refugees would over time pay back the costs to the funders as a pension. Yuki Fukuoka, one of the team members, reflected on the matter: "Due to the large influx of refugees to Europe, they are often seen as a problem in the countries accepting them, rather than an asset to society. We want to align the personal interests of host citizens and refugees because we believe that's the only robust and long-lasting solution. Ultimately, we want to help create a welcoming atmosphere towards refugees who seek better lives."



## Student Spotlight: Tia-Shae Filosi

Coming from the Australian countryside, Tia-Shae Filosi enrolled with the university's Modern Japanese Studies Program (MJSP) last year to study Japanese modern history and culture. When asked about why she chose Hokkaido University, she responded that she was attracted to the university since she is able to study bilingually through the MJSP, and since both the university and the city are surrounded by nature.

Often considered one of the most beautiful campuses in Japan, it is easy to see why Tia-Shae was attracted to the university. "My favorite thing about Hokkaido University is even though I'm in the middle of a city, it doesn't feel like that," she continues, "There is lots of nature on campus, which makes my everyday walk to school very enjoyable." Sapporo is indeed a beautiful city which has a small-town vibe while offering all the commodities and benefits of a metropolitan city. "I'm planning on staying in Sapporo after graduation," Tia-Shae remarks, "I have fallen in love with this city, so I plan to get a job here when I graduate." The university and the city is full of greenery, and the same (if not more) can be said about the island of Hokkaido.

Tia-Shae loves to travel and try new things during her holidays. The next place she wants to visit is a city at the northern-most point of Hokkaido called Wakkanai. She is particularly looking forward to watching the National Dog Sled Competition held there in late February. Having said all this, Tia-Shae's favorite thing about Hokkaido is the food. "Everything here is so fresh and delicious," she says.

During her free time, Tia-Shae works as an English teacher at a language school in Sapporo, and she loves to read Japanese novels. The next one she wants to read has a very intriguing, unique, and slightly frightening (?) title: "Kimi no Suizou wo Tabetai" by Yoru Sumino. The title translates to "I want to eat your pancreas." Tia-Shae, we hope you enjoy the novel (though, please don't eat anyone's pancreas), and your studies here at Hokkaido University!

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