

# THE KITAKAMI TIMES

*Iwate, the International Linear Collider, and You*



*In this issue...*

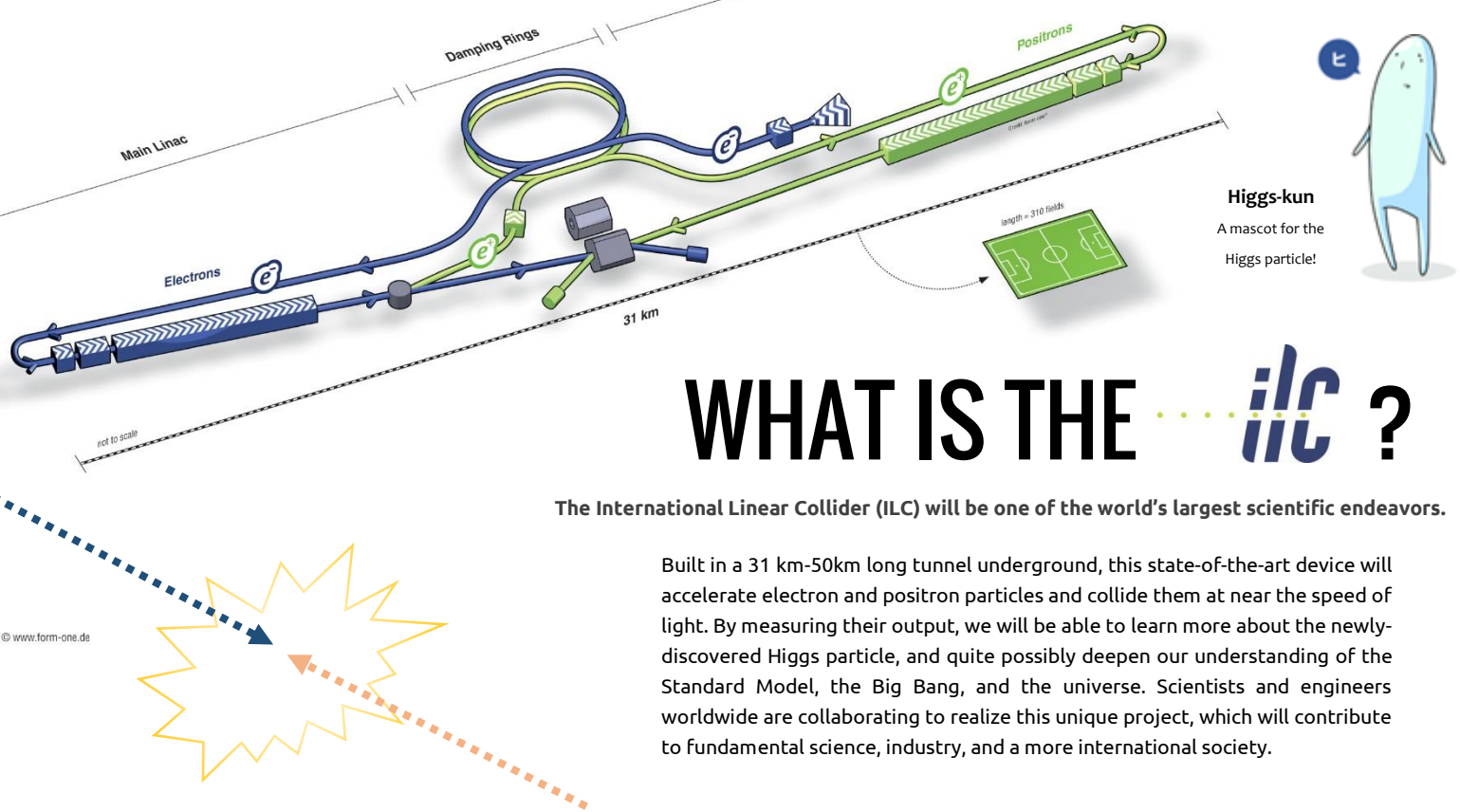
**“Understanding the ILC in 1 minute”**

About the 2016 AAA Symposium in Tohoku, held in Oshu City

**Plus, “ILC Apples” made by local students, and a newcomer’s experience in Oshu City**

A statue of Iwate’s most famed poet and philosopher, Kenji Miyazawa, stands at Hanamaki Agricultural High School.





# WHAT IS THE ?

The International Linear Collider (ILC) will be one of the world's largest scientific endeavors.

Built in a 31 km-50km long tunnel underground, this state-of-the-art device will accelerate electron and positron particles and collide them at near the speed of light. By measuring their output, we will be able to learn more about the newly-discovered Higgs particle, and quite possibly deepen our understanding of the Standard Model, the Big Bang, and the universe. Scientists and engineers worldwide are collaborating to realize this unique project, which will contribute to fundamental science, industry, and a more international society.

## THE JAPANESE CANDIDATE SITE

### TOHOKU, NORTHERN JAPAN



#### Iwate Prefecture

A large prefecture in northern Japan, Iwate is home to the Kitakami candidate site for the ILC.



#### Oshu City

The ILC's northern end will lie in Oshu, which is also home to the Mizusawa National Astronomical Observatory.



#### Miyagi Prefecture

Directly south of Iwate, Miyagi holds both Kesennuma and Sendai cities in its borders.



#### Morioka City

The capital city of Iwate, and the host of the Linear Collider Workshop 2016.



#### Ichinoseki City

The ILC will pass through Ichinoseki City, one of the largest cities in Iwate.



#### Kesennuma City

The southern tip of the ILC will lie in Kesennuma City. The city is hard at work rebuilding from the 2011 earthquake and tsunami.



#### Sendai City

Home to Tohoku University, Sendai is the urban center of the entire Tohoku region.

### THE KITAKAMI MOUNTAINS ILC CANDIDATE SITE

The Kitakami mountains are a range of gentle, rolling mountains in Iwate and Miyagi with a thick granite bedrock – perfect conditions for an underground particle accelerator.

## FOR THE FUTURE

If the ILC becomes a reality, about 3,000 researchers will come with their families to live in the area. An international hub of knowledge will be formed in our backyard, with leading edge research that will inspire new industries: medicine, IT, biotechnology, and many more. The ILC will be a great beacon of hope to the people of Tohoku, Japan, and the rest of the world. The entire region is joining together to make it a reality.

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International Linear Collider

# “Understanding the ILC in 1 minute” – AAA Symposium in Tohoku 2016

By Anna Thomas

Science story-tellers. Our future (aka, our youth). Science Hello Kitty. On September 10<sup>th</sup>, they all came together for the AAA Symposium in Tohoku 2016, held in Z-Hall, Oshu City! Called “Understanding the ILC in 1 Minute,” this symposium was focused on explaining the ILC in a way that’s easy to understand, as well as linking it to cool questions like “are there extra dimensions?” and “what is dark matter?”

KEK’s master science storyteller Dr. Junpei Fujimoto took the stage in part 1 to explain the ILC itself and the background behind the ILC. Science, he explained, is for understanding the laws of nature, without which we couldn’t build safe cars or airplanes, for example. Colliders like the ILC are necessary so we can see what nature/the universe is still hiding from us. The ILC could precisely measure the Higgs and Top Quark, and search for extra dimensions and dark matter.

Part 2 was a panel discussion between Dr. Fujimoto, LCC Communicator Ms. Rika Takahashi, director of the NAOJ Mizusawa VLBI Observatory Dr. Mareki Honma, later joined by local 3rd year junior high school students Momoyo Sugawara from Oshu Mizusawa Junior High School and Kotomi Sato of Ichinoseki Hanaizumi Junior High School.

The panel discussion, titled “The Universe We Observe; the Universe We Create – Searching for the Secret of Dark Matter,” was focused on how astronomy connects with particle physics through dark matter: astronomical observations show that dark matter is there, and have given “homework” to particle physicists to figure out what dark matter is.

The September 10<sup>th</sup> symposium



A question from the audience



Dr. Junpei Fujimoto talks to the audience about the ILC.



After discussing how observatories found and measured dark matter, why dark matter is believed to be a particle, and how the ILC could find a particle that explains dark matter, the conversation turned to the joys and worries of working internationally. Fujimoto lamented that colleagues from France and Switzerland always start fights about whose chocolate is tastier. Honma, who had flown in from Thailand that morning, pointed out Oshu's history of international research collaboration goes back to the Latitude Observatory that was built in 1899 in Mizusawa.

In the last part of the panel discussion, the stage got an infusion of youth from junior high school students Momoyo Sugawara and Kotomi Sato, two out of five members of the ILC Club, a group of junior high school students managed by Iwate Nippo Newspaper who visited CERN and meet regularly to discuss the ILC and how Iwate should prepare for it. Sugawara and Sato's paths to joining the ILC Club were a little different: Sugawara became interested from a visit to KEK and JAXA through Oshu's excursion program for middle school students, while Sato heard about the ILC and CERN in a school lecture.

From the approximately 300 participants to the youth participation from the audience and on the panel discussion (plus the brisk sales of Science Hello Kitty goods), "Understanding the ILC in 1 Minute" was a resounding success, as well as a tantalizing preview for the ILC Club's future activities!

## MEET THE ILC CLUB AT LCWS 2016!

What did the ILC Club think of CERN? What do these students think Iwate should do to prepare for the ILC? This is another reason to look forward to LCWS 2016 in December: the ILC Club will present their findings during the conference!

## LEARN MORE ABOUT OSHU

[Oshu ILC Promotion Division](#)

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Oshu ILC Promotion Division

I-L-C!! The panelists gather with the ILC Club for a great snapshot.





IWATE PREFECTURE

# How do you like \*them\* apples?

## The ILC Caravan goes to Hanamaki Agricultural High School

By Amanda Wayama

「宇宙は絶えず われらによって変化する」

“The universe will continue, through us, changing.”

-Kenji Miyazawa, Iwate poet and author

Iwate, with its large amount of arable land, is known as one of the top food producers in Japan. While demographic shifts and population decline have brought huge challenges for Japanese primary industry, and indeed the whole country, there are still young people in Iwate who are going into agriculture. In central Iwate lies Hanamaki Agricultural High School, where students learn the common high school curriculum along with the basics of farming. Each student majors in a certain field of agriculture, from animal husbandry to vegetable farming.

In late September, as the leaves began turning gold and scarlet, I met with the students majoring in fruit production. These young people are actually working on a special project for the Linear Collider Workshop 2016: they're growing special “ILC Apples,” to be given to researchers visiting for the conference in December. I spoke to them a bit about the ILC when we met, but for my part, I wanted to know the lowdown about these apples.

(To be quite honest, I probably learned more about growing apples than they did about particle physics!)

First things first. We drove up the dusty road to their campus in the hills of Hanamaki, passing by rice fields and the surrounding farms. I strapped on my boots and work clothes – today, I was prepared to get dirty. After meeting the students outside, we had a talk about the International Linear Collider.

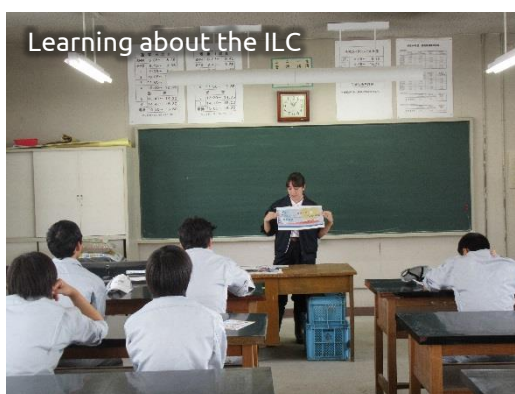
This was part of the ILC Caravan, which is a series of lectures in Iwate led by people involved with the ILC. We travel around with the Caravan to talk to various people about the project, with a focus on those who might not interact with physics or international relations on a daily basis. After all, those people are already very interested in the ILC. The ILC Caravan is being held to make the case that the ILC is truly a project that will involve everyone, from the Nobel Prize-winning scientist to the farmer tending the fields near the ILC facility.

After talking about what the ILC does, and how Iwate might change with an influx of new foreign residents, we marched out to the apple orchards to prepare the ILC Apples. The students had already wrapped the apples on the trees in newspaper, to block the sun's light. Removing the paper revealed pale yellow apples, upon which we stuck clear seals with “ILC” written in black marker. While the sun will turn these apples red, the ILC letters will remain the lighter color. Together, we spent the next half hour unwrapping the apples and placing the stickers.

Together in the orchard



Learning about the ILC



It's sticker time!





The apples won't be harvested for a few more weeks, after some tender love and care from the students. For my part, I was amazed with how much work goes into creating something I take for granted: the humble apple. I was also happy that the students seemed interested in learning more about the ILC. I just hope that they took away one fact: if the ILC is realized here, their lives will change. Even if they never take a step inside the ILC campus, their fruits will be bought by local researchers. Their neighborhoods will become more international. And their region will grow stronger and more vibrant. The ILC is truly something for everyone.

Incidentally, Hanamaki Agricultural High School is also known for one of its most famous teachers: a man named Kenji Miyazawa. Miyazawa was a writer, and philosopher, and teacher, and all-around Renaissance Man born in Iwate in the early 20th century. To Miyazawa, the rolling hills that now make up the ILC candidate site were a precious resource – all of Iwate, including the Kitakami mountains, was his personal “Ihatov”, which is an Esperanto word he coined that means both “Iwate” and “home.”

As you can see below, the poster for the LCWS 2016 takes its motif from Miyazawa's classic tale, “Night on the Galactic Railroad,” where a boy takes a trip to the stars in a train that flies through the night sky. What awaited the boy was the question: what is true happiness? In a similar way, the following question awaits us with the International Linear Collider: how was the universe formed? And for participants of the LCWS 2016? ILC apples, fresh from Hanamaki, will await you in Morioka!



## LEARN MORE ABOUT IWATE

[Iwate Prefecture Official Homepage](#)

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Iwate Prefecture (English)

The Hanamaki Agricultural High School students with their prized apples





Rice fields and bullet train tracks:  
Oshu has the best of both worlds.



ILC SUPPORT COMMITTEE

# A look at Oshu City: From an “outsider’s” perspective

By Dean Ruetzler

*In a few years’ time, researchers will begin moving to Iwate and the rest of the Tohoku region from all over the globe to work with the ILC (fingers crossed). What will it be like to be a newcomer to the area?*

*Dean Ruetzler is a long-time resident of Iwate and member of the ILC Support Committee. He recently moved from Morioka City to Oshu City, which is part of the proposed ILC site, and he has shared with us some experiences that perhaps some of you reading right now will have in the future.*

I am not new to Japan. I have been a resident of Japan for seventeen years now. Nor am I unfamiliar with Iwate: I have spent all my years in Japan in “Rock Hand” prefecture. Morioka, where I have spent fourteen of those years, is also quite familiar to me. At times I feel like I know the city, as we say in English, “like the back of my hand”, “inside out”, “back to front” or whatever other similar idiom you choose.

I am not really unfamiliar with Oshu City either, I have been visiting it, for various reasons, for years. I am familiar with the city’s major landmarks, buildings, and business, especially those where foreigners tend to congregate.

However, knowing a few popular places is still an “outsider’s” viewpoint. An “insider” will know every shortcut while driving, which cleaning service gets your shirts the cleanest, where you can go to get the best pizza and cheapest gasoline for your car, and probably has the JR Tohoku line departure and arrival times memorized. They have the knowledge of a long term resident, not just someone who visits once or twice a month.

I am in the process of gaining my “insider’s” knowledge of Oshu, but I am still probably a few years away from anything resembling that level of knowledge.

Being not just the “outsider” that my foreign origin bestows me in Japan, but an “outsider” among the foreign community also, I am frequently asked “What do you think of Oshu?” sometimes even by my fellow foreigners. It is a question that as my years and familiarity with Morioka passed, appeared with less and less frequency.

That said, a few things are starting to really stick out in my mind about Oshu, especially when juxtaposed with the prefectural capital, Morioka:

1. Oshu is a quiet place. Morioka is not Tokyo, but the hum of traffic on Route 4 (a large national road), construction, road repair, and occasional siren in Morioka make the tranquility of Oshu stand out.
2. The sunsets are incredibly scenic. The frequently clear skies, an undisturbed horizon to the west, and the Ou Mountains casting their shadows produce some sunsets that are nothing short of resplendent. Only the sunsets I saw in Finland with the different coloring of the sky due to its northern placing can compare.
3. Once you get out of the area surrounding Route 4, it gets rather pastoral. I grew up in a dairy town of 2,500, so I think that is a great thing. I really enjoy my drives to work that take me out to rural Esashi. The scenery is awesome, and on a clear day you can see Mt. Iwate.

However, you may be picturing “the countryside”, “the sticks”, or whatever other moniker you choose to add to rural abodes across the globe. Monikers that evoke images of Jed Clampett “Huntin’ for some food”, cows

lazily munching in pastures, mud-covered pigs squealing, fiddles-a`-playin`, and perhaps even tractors working the fields and weary workers eating beans from a kettle over a starlit campfire.

That is not a complete depiction of Oshu. It is, after all a municipality of over 100,000 that is just lucky enough to be near such pastoral beauty. A two minute walk from my apartment will get me to a noodle shop, DVD rental store, laundromat, and a drug store. Multiple gas stations, supermarkets, convenience stores, and even a dry cleaner, health club, and home center are all within a five minute drive. Another five minutes in the car and I'm in the city center with its assortment of stores, restaurants, and other amenities.

As I further delve into my surroundings, I do find that while Oshu may be a bit of a “rural” city, it is certainly not lacking for what makes my daily life convenient. We are after all, talking about living in one of the world’s biggest economies and more developed countries. In fact, I have learned a great place to get a nice imported European rye straight off the shelf, with assorted imported treats and staples all waiting to give me a moment of familiar “comfort” and indulgence.

Don't let the rice paddies fool you: it's got huge box stores too. Conversely, don't let the bullet train station and chain stores fool you, it has some great history and scenic beauty to it. I suppose it all is how you look at it. However, keep yourselves open to the possibility of having the best of both worlds, as I am learning day by day. I look forward to exploring, seeing, and enjoying much more of Oshu.



A beautiful sunset in Oshu



International Workshop on Future Linear Colliders

# LCWS2016

5-9 DECEMBER , 2016

Aiina Center & MALIOS ,  
MORIOKA CITY , IWATE , JAPAN

The workshop will be devoted to the study of the physics cases for future high energy linear electron positron colliders, taking into account the recent results from LHC, and to review the progress in the detector and accelerator design for both the ILC and CLIC projects.



## LCWS 2016 in Morioka, Iwate!

Registration

[http://lcws2016.sgk.](http://lcws2016.sgk.iwate-u.ac.jp/Welcome.html)

[iwate-u.ac.jp/](http://lcws2016.sgk.iwate-u.ac.jp/Welcome.html)

[Welcome.html](http://lcws2016.sgk.iwate-u.ac.jp/Welcome.html)

CLICK THESE BUTTONS TO LEARN MORE



tours of iwate



for lcws 2016

There will also be an Iwate product fair and a **tour of the ILC candidate site!**



## IN THE NEWS

### October 4<sup>th</sup>

#### Multilingual menus for restaurants: Business in Esashi, Oshu develops app

**Tanko Nichinichi:** Shogic, a company in Esashi ward, Oshu has developed a multilingual guidance app. Through simple operation on smartphones and tablets, the application can display restaurant menus and provide travel guidance, so it can be used as a supplement for serving international customers. Currently, the app is being used at a restaurant inside the Chuson-ji temple grounds in Hiraizumi, which receives many international customers because the area is registered as a World Heritage Site.

### October 6<sup>th</sup>

#### **Film on ILC, National Sports Festival: Oshu City's PR efforts aimed at visitors to the Mizusawa-Esashi Station Exchange Plaza**

**Iwate Nichinichi:** The Oshu City Government has set up a PR corner within JR Mizusawa-Esashi Station in order to share information on the ILC with shinkansen train riders. They starting showing a 5 minute video in an area of the Southern Iwate Exchange Plaza so that people going through the "entrance" to Oshu City can learn more about their efforts to realize the project.

### October 7<sup>th</sup>

#### Tours of Iwate sake breweries and craft workshops: Experience the charm of Iwate during LCWS 2016!

**Iwate & the ILC:** December's LCWS 2016, held in Morioka City, Iwate, will be the perfect opportunity for us to share the charm of Iwate's traditional culture. The Iwate Prefectural Government will be offering tours of local sake breweries and craft workshops for researchers and their accompanying family members and guests. We're still in the planning stages so dates and prices are yet to be determined. Information on reservations will be added as we get closer to the LCWS.

### October 9<sup>th</sup>

#### **Conveying the passion we have for hosting the ILC: Two months left until LCWS 2016**

**Iwate Nippo:** During the LCWS, there will be gatherings of all participants and smaller workshops. Participants will bring the results of their latest research, and discuss the issues facing the realization of the ILC project. There will be opportunities for Japanese businesses to network with researchers, and a tour to the proposed site of the ILC in the Kitakami mountains is being planned for the last day of the conference.

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with Oshu City, Ichinoseki City, and the ILC Support Committee

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Our next issue is planned for November. Please let us know if you have any comments or suggestions!