

## Findings through JUACEP

**Name:** Julian Zhou

**Affiliation at home country :** MAE UCLA

**Participated program:** Summer Course 2016

**Research theme:**

Probabilistic Methods in the Optimization of Nonlinear Control Systems

**Advisor at Nagoya Univ.:** Prof. Susumu Hara

**Affiliation at Nagoya Univ.:** Aerospace



I had a theory going into this experience that despite all of the “weird Japan” stuff that Americans always hear about that Japan would basically be exactly like America. And I was 100% right. The funny thing is that if you talk to anyone who has recently visited Japan they cannot stop going on about its ancient beauty, how elegant it is, how polite, shy, and eager to please its people are etc. It is like everyone agreed to be brainwashed by the same idiotic travel think piece.

You will find the same problems here that you find in America, or any other country. You will also find the same benefits. I can really only think of 3 essential differences. First, you can find cooler hoodies here. But that is just my taste in hoodies. Second, Japanese food is more available. Third, public transportation is better. Most importantly punk is great in Nagoya, just like it is everywhere, if you can find the right venues.

My point is that nothing I can say here should serve as an advertisement or criticism for visiting Nagoya or joining this program. You should go if you want to go. If you are like me, you would probably have a good time going. Also, Taka, my TA, was the best engineer I have ever worked with, so that was cool. Thanks for accepting me, JUACEP, say hi if you're ever in America.

## Findings through JUACEP

**Name:** Carlos Alberto Gamez Villegas

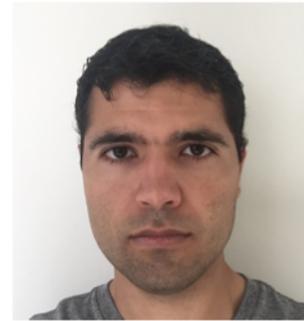
**Affiliation at home country:** Mechanical and Aerospace Engineering,  
Univerisy of California Los Angeles

**Participated program:** Summer Course 2016

**Research theme:** Temperature Dependent Thermal-Electrical-Structural Finite  
Element Analysis Around Crack Tip Under High Current Density Electropulsing.

**Advisor at Nagoya Univ:** Prof. Yasuyuki Morita

**Affiliation at Nagoya Univ.:** Mechanical Science and Engineering



I have never been outside of America, making this strip my first to a new continent. That is how my journey began, by visiting an entirely new continent. During my stay I was able to do multiple things in Japan. I was able to learn a little bit of Japanese (common phrases and also writing). My Japanese class helped me to understand Hiragana and Katakana, they don't look strange symbols to me anymore (my writing was not so good though). I learn also a lot of what makes Japanese culture so special. The coordinators of the program were keen to share their culture with us. They took us to Toyota Kaikan Museam, Toyota Factice and the Railway Park. We also build our own engine in one of our hands on workshops.

I was able to travel around as well. I visited Takayama, Gero, Shirakawa, Osaka, Nara, Kyoto and finally Tokyo. Every weekend was an adventure where I was able to taste the best food around and visit great landmarks of Japan. Sometimes the language barrier was difficult to overcome but all the people that we met did not give up on us, they were nice and patient. My lab mates always tried to include me in their celebrations, they were friendly and helpful. Overall, my all experiences had a great impression on me.

My experience on campus was memorable. Going to the gym so not as easy as I thought, I had to bring indoor shoes to enter it. The cafeteria is not full of food chains like the Food Courts in the United States. My relationship with my lab mates were pleasant. My limited Japanese and their limited English was an obstacle, but we were able to overcome it. In the academic side, I increased my knowledge on ABAQUS, now I am able to do a couple thermal-electric-structural analysis and export the results to do a failure analysis as well. With my new knowledge of XFEM in ABAQUS I am capable of simulating crack growth on 2D and 3D problems.

I'm almost done with my PhD program at UCLA and this trip influenced a lot on my formation as a PhD. The exchange of ideas between two different cultural backgrounds will help me to communicate better in the future. International collaboration is key to make leaps in our respective fields and making connections with people of other nations is not as difficult as I thought it was. I also learn more about ABAQUS, a tool that has a great value to a Mechanical Engineer.

I have must admit that I'm really happy that I was able to participate in the program. I was able to experienced great moments in Japan. I was happy the way we were treated by the staff and I also I was happy to have the opportunity to collaborate with people with a very different cultural background than mine. I was able to experience fist hand the Japanese culture at the same time I was able to conduct research. I recommend this program to anyone who wants to have a great balance of research and experience a new culture.

## Findings through JUACEP (Change the title as you like)

**Name:** Chen-Hsi Huang

**Affiliation at home country (Dept & Univ):** Materials department, UCLA

**Participated program:** Summer Course 2016

**Research theme:** Mechanical properties of lipid vesicle studied by  
molecular dynamics simulations

**Advisor at Nagoya Univ:** Prof. Wataru Shinoda

**Affiliation at Nagoya Univ. (Dept.):** Applied chemistry



It is a very pleasant trip in Japan. I got more familiar about Japan culture. I visited many places including Nagoya, Kyoto, Nara, Matsumoto, Takayama, etc. I learnt the research style and lab life in Japan. The research style in Japan is not very different than the labs I have been worked in such as in Taiwan or US. The adviser and lab mates are very nice. I had a great time in the lab. I also learnt some Japanese, but I am still not able to use Japanese in communication. I'd probably need to take more Japanese courses to master it. Japanese are very polite. They are always concerned about making troubles to others. This is very different than in the US. Many cases when we say thank you in US become sumimasen in Japan. We also have more rules and take more serious in rules here in Japan.

The participation of JUACEP program makes me more familiar with Japan. For this, I'll definitely visit Japan again. Also, I'll consider apply for post-doc or jobs in Japan, but probably in bigger city such as Tokyo.

## Japan, The Surprising Country

**Name:** Chang Chih-Kang

**Affiliation at home country:**

Robotics Program, University of Michigan

**Participated program:** Summer Course 2016

**Research theme:**

Intuitive user interface for surgical tool operation

**Advisor at Nagoya Univ:** Prof. Yasuhisa Hasegawa

**Affiliation at Nagoya Univ.:** Mechanical Engineering



Japan is a familiar and unfamiliar country for me. I am from Taiwan, where Japanese culture is very popular, and I have been in Japan for travel several times. However, this was my first time to stay in Japan for more than 2 weeks, and this time it was not only for fun.

Before I arrived, I was thinking about working as hard as possible to have a publication after 2 months (I heard someone really did this). However, the idea was soon blown away. Not only because I was assigned to a starting project which was impossible to have result in summer, but also because I was overwhelmed by the abundance of Japan. There were mountains, beaches, hot springs, world heritages and lots of other places where I could not stop myself from going. In 9 weekends I had, I have travelled for 5 of them and every time I was surprised by different spots I experienced. Just to list a part of them, the rustic shirakawago village relaxed my body, the royal Itsukushima Shrine moved my heart, and the sunrise on top of Mt. Fuji reminded me of the passion I had and pushed me to move on.

Let's come back to Nagoya. Though the research situation was not what I anticipated, I still made some process. One of my lab mates was from Peru and he spoke perfect English, while the other was Japanese who spoke poor English. It was very interesting to work with Japanese. Japanese people were very earnest. My lab mate would listen to me sincerely and tried his best to help. The results he showed on the meetings were highly completed even when it was just a weekly internal meeting. However, the academic environment seemed to be limited since everything was in Japanese and the students were not familiar with foreign materials.

During the 10-week program, besides gaining experience in research and technical skills, the biggest outcome was that I really enjoyed Japan. I travelled lots of fun places and knew some Japanese friends. I learned the delicate value of Japanese and practiced Japanese. Though I am not sure if I will be here again for study or work, I believe the international experience will bring me to a brighter future.

## Findings through JUACEP

**Name:** Itsui Yamayoshi

**Affiliation at home country:** Mechanical Engineering, UCLA

**Participated program:** Summer Course 2016

**Research theme:** Path Tracking using LIDAR Localization and Mapping

**Advisor at Nagoya Univ:** Prof. Tatsuya Suzuki

**Affiliation at Nagoya Univ.:** Mechanical Engineering



My experience in the JUACEP program has been a wonderful one. Being a Japanese born student who spent most of my life and education in the United States, it was a great and unique experience to be able to come to Japan and participate in research at a Japanese university and to immerse myself in the culture here. Although I was able to speak the language to a high level, I believe that I was able to garner a notable cultural education during my stay in Nagoya University. Through interactions with lab mates, professors, other JUACEP participants, and excursions that I participated in, I have improved my Japanese and have learned many new things about Japan that I did not know about before.

For the JUACEP program, I entered Professor Suzuki's lab to work on research using LIDAR to accomplish things such as SLAM (Simultaneous Localization and Mapping) and path tracking. I was able to work on and learn about many things I didn't know before. I learned Linux and ROS (Robotic Operating System) and learned to use them to receive data sent by the LIDAR. Then, I assisted in developing the communication between two computers so that the received data can be processed. From here, I worked with programs written in C# to accomplish the control of the COMS vehicle. Through all of this, I was able to accumulate new knowledge on programming, SLAM, and controls that I will be able to carry on to my future studies at UCLA.

Moreover, during my stay, I took the opportunity to attend some of the lectures taught at Nagoya University, including my own advisor's, and also attend the weekly seminars held by the lab. Although, I was not able to fully understand everything during lectures and seminars due to limitations in my Japanese, I believe that these experiences have cultivated a better foundation for me to work at a research or a professional environment in Japan for the future. On top of this, my interaction with other lab mates from both Japan and international backgrounds have fostered new friendships and memories that I will cherish.

In my time in Japan, I also had the fortune of traveling around outside of Nagoya. I was able to visit enthralling cities like Osaka, Kyoto, and Tokyo. I got to see the beautiful bamboo grove of Arashiyama, the shrine path filled with torii in Kyoto, the illuminated night life of Dotonbori, and the electrifying hubs of Shibuya, Roppongi, and Akihabara.

All in all, I have enjoyed my time in the program and appreciate the opportunity to be able to study, live, and travel in Japan. I would definitely recommend the program to those that are interested in Japan and want to see what life is like over here. I would also recommend it to anyone like me who may have been born in Japan but moved to another country and want to see what Japan is really like. Either way, it will be a terrific experience!

## Findings through JUACEP

**Name:** Matthew Yee

**Affiliation at home country (Dept & Univ):** UCLA Materials Science

**Participated program:** Summer Course 2016

**Research theme:** Carbon nanotube thin film transistors on flexible plastic substrates

**Advisor at Nagoya Univ:** Prof. Yutaka Ohno

**Affiliation at Nagoya Univ. (Dept.):** Electrical Engineering



I've had an amazing time this summer while staying in Japan. It really was a unique experience to live in a foreign country and really be immersed into the culture through my research, Japanese course, and travels.

My research was with Professor Ohno working on carbon nanotube thin film transistors. This was an unfamiliar topic for me, but my TA was extremely helpful and patient with me and taught me everything I needed to know for my project. It was a lot of fun to get to know all of the different members of my lab. Sometimes there was a language barrier since their English and my Japanese left a lot to be desired, but all of them really made an effort to befriend me and make me welcome during my time here.

Nagoya was also a great city to live in. Although it isn't as big or iconic as cities such as Tokyo, Osaka, or Kyoto, it is still filled with a lot of interesting and fun places. Even in ten weeks, I feel as if there is still so much more of the city for me to see. The food in the city was also amazing and the Hitsumabushi was one of the best meals I've ever had.

I also had the chance to travel around Japan a little bit. I went to Kyoto, Osaka, Tokyo, and was even able to climb Mt. Fuji to see the sunrise from the summit. The trains and buses in Japan made it really easy to get around and it was actually pretty fun to ride the trains through the countryside.

It's hard to believe that the summer is almost over. I feel like I've been able to do so many different things and learn so much about Japanese language and culture, but there are also so many things that I still want to do. JUACEP has allowed me to make new friends, explore Japan, and learn about the culture and I am very thankful for that.



## A Sizzling Summer Overseas

**Name:** Raymond Roman

**Affiliation:** Department of Mechanical & Aerospace Engineering, UCLA

**Participated program:** Summer Course 2016

**Research theme:** Effects of Stenting on Aneurysm Hemodynamics

**Advisor at Nagoya Univ:** Prof. Ito

**Affiliation at Nagoya Univ:** Mechanical Science & Engineering



Recently I spoke with a friend about how our lives were different five years ago versus today. I, for one, did not imagine I would spend my summer of 2016 in Japan of all places. In that span of time, I did not envision that I would spend quality time learning the Japanese language, much less spending an extraordinary summer overseas. I never even imagined that one of my summers while still in school would be spent in Nagoya finding beer gardens, making daily trips to Lawson, and expanding my Japanese speaking abilities with friendly strangers. I am immensely grateful to the JUACEP program for allowing me to breathe in the Japanese culture and experience it firsthand.

There were a couple cultural differences that were most apparent to me when arriving to Japan. The first thing that floored me when stepping off the subway was the cleanliness of Japanese streets, and actually every public place imaginable. Finding immaculately kept streets or roadways is unheard of and laughably unachievable in the booming metropolises across the Great Pacific. The other thing that struck me was the sheer density of Japanese convenience stores in a Japanese square kilometer. When learning about Japan, I somehow managed to gloss over the fact that Lawson convenience stores and 7 Eleven comprised the backbone of the average Japanese town. It seemed kind of fantastical to be able to get inexpensive snack foods that truthfully I've only ever really seen in anime.

My ten weeks in the JUACEP program was primarily filled with research. My research topic, under the guidance of Professor Ito, fused together the fields of physiology and fluid dynamics to investigate the precise behavior of blood when treating aneurysms with flow diverter stents. I took courses in biology for my bachelor's degree, so studying fluid dynamics through the lens of its clinical significance was probably the most interesting and eye-opening aspect of the research I performed. My approach to this research was through computational simulations, so learning the ins and outs of various computational software and gathering data for analysis ensured the ten weeks went by very quickly.

The Toyota factory tour also enriched my experience in the JUACEP program. Normally classrooms do not provide much in the way of hands-on participation, but the Toyota factory tour augmented my perspective of mechanical engineering and translated hundreds of pages of textbook material into things I can actually perceive.

Beyond my scholarly duties, my sightseeing explorations, though limited, were packed with quality. The most unforgettable one was visiting the Nagashima Spa Land amusement park where my thirst for ultimate thrill was happily quenched. While I've gone to plenty of amusement parks in the United States, thrill rides and coasters of the Japanese pedigree are light years ahead of what we have stateside. Riding the Steel Dragon 2000—the second fastest roller coaster in Japan!—was something of another world. I'm pretty sure it catapulted me into another dimension.

One lesson I unintentionally learned was that ten weeks is not enough time to explore the beauty and magnificence of the Land of the Rising Sun. I regret not exploring enough while staying these ten weeks; however, Nagoya seemed to have it all for me in the way of big town—small town vibes. It may have been the blindsiding humidity that aggrandized my summer torpor, but I personally lavished in exploring Nagoya and its quirks and novelties. Although I will return home when the sun sets on the Summer 2016 JUACEP program, I will definitely visit Japan again in the future (though probably during a season with less brutal weather).

## Findings through JUACEP

**Name:** Sandeep Kumar Ingersal

**Affiliation at home country:** University of Michigan

**Participated program:** Summer Course 2016

**Research theme:** Study and control of chatter vibrations in milling operation

**Advisor at Nagoya Univ:** Prof. Shamoto

**Affiliation at Nagoya Univ.:** Ultra Precision Engineering Laboratory, Mechanical Science Dept.



I didn't hold any high expectation for the JUACEP program when I accepted it. I believe even if I had carried high expectations, the program would have met those definitely. There are two ways to experience a country. You land up with your bunch of friends or family, stay there for a fortnight, visit places and carry the memories created within your small circle. The other way (called the traveler way) is to stay in that place, talk to local people, live with them, feel their culture and learn their language where you create memories mainly through personal interaction with the local people rather than visiting tourist attractions. The latter provides the chance to create a healthy bonding and relationship with a country. The program almost equaled the latter one and it's the same way I wanted it to experience too. Being in the research program, I got the opportunity to work in the laboratory with all the Japanese Students and it kept me away from interacting with people I knew or know the language I speak. I value it as an important experience in this program.

Except to get fluent with the Japanese language, I felt 10 weeks of time were sufficient to experience the Japanese culture, to make friends and to visit important places. Japanese people were very courteous and friendly, and I felt that all the places in Japan were very welcoming for a foreigner because of its culture. Learning Japanese language during the first month of program was helpful in speaking common Japanese phrases with your lab mates and to the public. It helped us to get more social with the Japanese and enjoy our rest of the stay. My stay in the International Dorm was great and it had excellent facilities. I couldn't ask for anything better for the price we paid during our stay. I also visited world heritage places like Kyoto, Nara, Shirakawago.

Academically, the program showed a higher standard too. Nagoya University, being famous in Japan for its research, the research environment I experienced was testimony to its claim. My laboratory professors were very helpful and they framed a curriculum for me to follow which helped me to go in the right pace and right direction to make the best out of my research. I also did experiments with my lab mates to learn the concepts related to my research. Since I was working in an Industrial research project, I also had a chance to visit the AISIN factory to visually experience the technical problem at the field which is related to my research.

Overall, I had a great experience in Japan. I have gained some cross-cultural experience and have enriched by academic knowledge through my research experience in Japan. This study-abroad experience would not just stay on my resume but something that would influence me in my personal development process. Arigato Gozaimas!!

## Findings through JUACEP

**Name:** Xiaojin Shen

**Affiliation at home country:** Nuclear Engineering and Radiological Science, University of Michigan

**Participated program:** Summer Course 2016



**Research theme: Experimental measurement and numerical analysis for**

**the molten borosilicate glass with or without solid particles**

**Advisor at Nagoya Univ:** Prof. Enokida and Associate Prof. Sugiyama

**Affiliation at Nagoya Univ.:** Quantum Science and Energy Engineering

JUACEP program motivates me to learn more about the nuclear waste reprocessing in the future study. I am very grateful that I was admitted to stay at Nuclear Chemical lab this summer supervised by Professor Enokida and Sugiyama. When I just entered this lab, I remembered that there were three undergraduate students working hard in front of their working desks. When they saw me, they smiled kindly. You may feel that they were too shy to introduce themselves in English directly, however after one week to fit in my labmate could start to talk with me and even gave me some help without asking, for example they taught me how to lock the door of our lab if I am the last person leave from the lab, some basic rules followed in our lab, or shared with me some Japanese cookies or sweets. The working atmosphere around this lab is hospitable. The relationship between our labmates and my host professor is very friendly. My host professor always makes jokes on one of my labmate Souta to have healthy food instead of cup ramen, and what's more since I came to this lab to study, every Monday morning seminar of our lab was held in English instead of Japanese. Thanks for the Japanese class, after this program in spite of the limited vocabulary storage, I am able to express myself in a few Japanese accurately and I will continue to study Japanese in the future and keep the friendships with my host professor and the labmates.

For the research side, I extended my potential involved the research related with nuclear waste reprocessing. I and my TA Uchimura are working on this project, even though our study has not finished to tell the whole story yet, we tried our best to investigate how the solid particles effected on viscosity of the borosilicate glassy melt. My research is related both with the experimental measurement and the computational fluid dynamics analysis, since I have little experience before with the composition analysis followed by alkaline fusion and X-Ray Diffraction method, my TA Uchimura helped me a lot with the experimental side, such as we diluted our glass samples together for more than ten times and helped me created the calibration curves for ruthenium and other Pd/Te metal elements, moreover, each glass samples for 50 milligrams was obtained from a homogenized discretized layer of the simulated borosilicate glass 900 grams, in the term of *homogenized* here, it needed a huge hammer work to crack the glass from block into the powder so that we did the hammer work in turn. Almost every week we arranged a meeting with my host professor Enokida, therefore my project was moving fast and productive. Finally, we made a breakthrough that we detected the ruthenium dioxide as one of the components in the glass powder we used successfully. Besides the experimental measurement, I simulated the inclined plane domain as a local interest for the nuclear waste melter in ANSYS/Fluent, another professor Sugiyama also gave me a lot of comments to accomplish my work. All in all, I am enthusiastic to do the research at Nuclear chemical lab. Our research needs time and patient, efforts and reflection to find the beauty of glasses.

Last but not least, the travel experience in Japan makes me to see this world more clearly. My host professor arranged a trip for me to Kyoto with my TA and Souta to join the Gion Matsuri festival. And during the Bon Holiday, I with my program friend climbed Mt.Fuji and attended the Hanabi Festival at the Suwa lake. You might probably be attracted by the colorful Japan – Green, yellow and blue... I found how small I was when I up to the top of the Mt.Fuji, I found the high civilian responsibility of Japanese when I got *lost*. I found how the firework beautiful in Japan, and it was the best firework show I have ever seen, you may appraise the art and elegance created from Japan. I