



M.Sc. Air Quality Control,
Solid Waste and Waste Water
Process Engineering

(WASTE)

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NEWSLETTER

SUSTAINABLE DEVELOPMENT IN ACTION 2018

MSc. WASTE students of Generation 2018 at the SDIA Conference 2018 - Heidelberg, Momentum Novum Picture Gallery



Knowing that the environment is critical for survival is something that every MSc. WASTE student is acutely aware of. Figuring out how to engineer sustainable solutions is why we came to Stuttgart. And several of us went further on to Heidelberg to learn how to integrate sustainability into development. From November 1st to the 3rd, we had the opportunity to attend the Sustainable Development in Action conference held in the beautiful city of Heidelberg. The focus of the conference was to introduce the many facets of sustainable design and innovation through inspirational keynote speakers, informative workshops, and insightful Action Labs.

The opening keynote speaker of the conference shared with us the importance of making personal changes in the move towards sustainability. Igor Ramos (Gen. 18) summed up the beginning of the conference:

„The first opening speech could not have been more motivational. We are so used to thinking way ahead of what our hands can achieve, therefore, we act thinking that any personal change is too small to make a significant difference. We do not realize, however, that this

is how we create demand, step by step. Change yourself and the people surrounding will change their minds too, and then soon a domino effect is created. As a postcard shared at the Conference stated: „My one plastic bottle won't make a difference“. Repeat it 7.6 billion times“.

The workshops occurred on the first day of the conference. Topics such as the different response to climate change due to political and scientific factors, the impact of climate change on health, and using Geo-Data for sustainable development were discussed in groups. Salua Moussawel (Gen. 18) attended the one workshop called „The Climate Fight is a Street Fight: The Politics of Mobility in Copenhagen and San Francisco“. The difficulties of implementing policies for increasing bicycle use were explained and how movement towards such policies often results in politicized fighting. Salua noted, „It was fascinating to see how major polluters showed such a high number [of cars], accompanied later with facts that showed these same countries are well suited for higher bike use“.

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by Christina Zeuner
MSc. WASTE Student Gen. 2018

DAILY RIDDLES!

- 1 „Give me food, and I will live. Give me water, and I will die. What am I?”
- 2 „If you drop a yellow hat in the Red Sea, what does it become?”
- 3 „What always runs but never walks, often murmurs, never talks, has a bed but never sleeps, has a mouth but never eats?”

- 4 „A boy and an engineer were fishing. The boy is the son of the engineer but engineer is the father of the boy. Then who is the engineer?”
- 5 „What are the three R's of keeping the Earth clean?”
- 6 „Think fast: There's an electric train traveling south. The wind is from the north-west. In which direction would the smoke from the train be blowing?”

1 fire, 2 wet, 3 a river, 4 Engineer is the boy's mother, 5 Reduce, reuse and recycle, 6 An electric train has no smoke.

SUSTAINABLE DEVELOPMENT IN ACTION 2018

Kelly Rini (Gen. ,18), on the other hand, attended a workshop on The Role of Innovation and Technology for Sustainable Development and explained it as follows: „Our first workshop speaker shared his expertise in Efficient Resource Management, which allows for less natural resources to be used while motivating companies to reduce costs. I learned that innovation in sustainable manufacturing leads to decoupling natural resource use from economic growth. This means companies can still increase profits while reducing their impact to the environment“.

Our second speaker introduced an innovative concept of adding a marker to plastic packaging, which leads to marked plastics being sorted more efficiently and results in a higher rate of recycling. My team’s task was to identify the stakeholders, market barriers, and consumer responses to this new technology to illustrate the rebound effect of a sustainable innovation not being as effective as anticipated“.

As the conference moved into the second and third days, we flexed our creativity and ingenuity through four different Action Labs. These labs were

Design Thinking, Simulation of the 24th Conference of the Parties, Scenario Modelling, and Sustainable Startup. These sessions were designed to foster practical knowledge of the delegates on the different concepts used in sustainable development, as is explained below, each by one attendee. As the conference wound down, many of us were able to speak during the closing ceremony about what we developed during the labs. Igor Ramos and Hector Cañas both presented their designs from the Sustainable Startup lab, while Sagar Chawla and Christina Zeuner proposed their ideas from the Design Thinking lab. Being given the chance to share our work with everyone at the conference really hit home the importance of the concepts we learned. We saw that sustainable design can permeate through everything. All we need to do is allow it.

Our final keynote speaker, Simon Anholt, related what we did during the conference to his concept of The Good Country. Anholt had been working for many years on international relations and the environment. He found that leaders of countries always wanted to improve the planet but at the same time believed that any action would be bad for their

people, in terms of economic stability. So, he tried to develop The Good Country Index. A measure not by how a country does internally, like GDP, but how well a country impacts other. In fact, his mission ended up failing in the end even though the idea was widely liked. He never could get the shifts in thinking he was aiming for. So, he started The Good Country. A country that has no borders, just like-minded people. People who are united by common values. People who see that the world can become better and sustainable, if we allow it. People like us in the MSc. WASTE program.

Everyone who attended the conference can agree that it was an amazing experience. We learned so much about the potential of sustainable design and how to use different tools to achieve sustainability. The conference gave us a jolt of energy to get moving. And now, back in the MSc. WASTE classes, we can weave what we learned into our studies and into our future.

You can find out more about The Good Country at <https://goodcountry.org/>

Christina Zeuner
MSc. WASTE Student Gen. 2018

Design Thinking

During the SDiA 2018 Conference I participated in the Action Lab called Design Thinking for Sustainable Development. Designing Thinking is a methodology [from Stanford] to create innovated solutions, it is focused on understand and resolving the people’s needs. The methodology has 5 phases: Empathize, Define, Ideate, Prototype, and Test. Each dependent on the others to create an iterative process. My group and I worked on a sustainable solution for Events. We created a “Chestnuts Festival” because through the Empathize phase we could notice that people in Heidelberg thought that the city was boring. It was an interesting choice because when people think about sustainable development, they often think about the environment and the economy, not about society. The festival we designed was about social sustainable development, but also added elements of awareness around the importance of the Chestnut tree and the environmental issues it is currently facing.

Paola Acosta Carrascal
MSc. WASTE Student Gen. 2018



SUSTAINABLE DEVELOPMENT IN ACTION 2018



Conference of the Parties - COP 24

I took part in the simulation of the 24th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). The topic for this simulation was Promoting Sustainable Transportation for the Implementation of the Paris Agreement. All participants in the simulation had the opportunity to be the delegate of an assigned country. For me it was interesting representing Norway, a developed country that is leading the way for electric ground transport. In fact, its policies and strategies are being duplicated in other countries due to their great results. I also got to listen to other delegates explain the problems for their countries. Each had developed various strategies to reduce the emissions of greenhouse gases because priorities differ widely. This lab provided us with a broader perspective on the impact of Climate Change worldwide and what needs to be done to improve the current situation.

Diego Alvarez Florez
MSc. WASTE Student Gen. 2018

Scenario Modelling

In the Scenario Modelling action lab, we focused on constructing plausible scenarios for the future of cities and countries by 2050 while considering different aspects of sustainable development. For this aim, different factors which have influence on the sustainability of urban areas were gathered by participants. These were then developed into overarching factors - while still considering their uncertainty - and further utilized for building a scenario. We then tried to find possible consistent correlations among the different events. What made this action lab more interesting was the distinctiveness of each story formed by different groups through how each scenario was interpreted. We learned about the extensive application of this methodology in policy making and the importance of strategic thinking for this purpose. We all know that future will never be clear to anybody, therefore to obtain a proper plan for our world we need to be able to build alternative scenarios and evaluate them, regardless of their probability.

Ehsan Nemati
MSc. WASTE Student Gen. 2017

MSc. WASTE Students at SDiA Conference 2018 - Heidelberg, Momentum Novum Picture Gallery



Hector Cañas at SDiA Conference 2018 - Heidelberg, Momentum Novum Picture Gallery



Sustainable Startup

We learned from three entrepreneurs about their experience in developing companies dedicated to creating social impact while generating profit. So, using this concept of social entrepreneurship we thought about our own sustainable start-up company and developed a business model. VidaBau, my start-up team, concentrated in upcycling construction and demolition waste materials in Mexico City. The idea was to create an affordable prefabricated modular house to tackle two problems: an almost non-existing recycling culture of C&D waste and an exorbitant percentage of Mexico's population living in precarious conditions. Once we had finished our business model, we received mentoring in order to craft a 2min pitch of our business. At the conference closing ceremony all the start-up businesses were presented, and one was selected as the best by the audience. Surprisingly VidaBau won first place! It was a joyful moment for the group and me, as we won a 5 hours coaching session on Crowdfunding to hopefully one day execute VidaBau.

Hector Cañas
MSc. WASTE Student Gen. 2018

WELCOMING EVENT - GENERATION 2018

Life is an accumulation of numerous, unpredictable journeys. Therefore, the beginning of every new journey is when people feel scared, joyous, as well as extremely excited all at the same time. These same emotions were experienced when the amazing new journey of the students from Generation 2018 of the M.Sc. WASTE program officially began with the first welcoming event. The gradual unfolding of events turned out to be a memorable experience.

The day was beautifully warm and sunny. The welcoming event started with our official introduction to our Course Director, Dr. -Ing. Kristy Pena, along with the Class Speaker and our senior from Generation 2016, Nelson Felipe Rincon Soto. After a short session with necessary and valuable information regarding MSc. WASTE, we were divided into groups where we got to know our fellow classmates and introduced each other to the whole class. The cherry-on-top to the introduction was the challenge of putting our colleagues' countries on the map.

Later we started our hike towards the Solitude Castle where more of our seniors joined us. The whole hour and a half of walking through the forest became an enjoyable journey of bonding and communication among our classmates, seniors, and our Course Director. It was one of those moments where the journey was as beautiful as the destination itself. Moreover, the destination also provided two beautiful memories for us. One was the picnic where everyone brought some food and all of those were shared and enjoyed together. The second was the magnificent view of Stuttgart from there. After that we took a few official photos as well as a lot of personal ones. Later we visited the insides of the castle and were entertained with the historical stories that came with it.

The highlights of the second official welcoming event were the information session and the finger foods. The information ses-

sion let us gather an extensive amount of knowledge about the course, the curriculum, and our professors. Then class speakers for Generation 2018 were elected and later the finger foods prepared by our amazing and friendly seniors amazed us. All the foods were delicious, and that event gave us another opportunity to communicate with everyone.

Just as the proverb goes "morning shows the day", the two welcoming events showed us a glimpse of our beautiful two year journey ahead.



Adnan Shahriar
MSc. WASTE student, Generation 2018



Generation 2018 in front of Schloss Solitude
Photo by Jeremiah D. Photography

GRADUATION CEREMONY - GENERATION 2016

For every MSc. WASTE student, a journey starts when leaving their home countries only to realize that two very short years later it is all over! Students spend their time in the MSc. WASTE program meeting new people from all over the world, developing academic and technical skills, and networking with their professors. Thus, the MSc. WASTE program hosts an official graduation ceremony every year to send off their students with a blessing and wish them the best for their new professional lives. All MSc. WASTE students, professors, friends, and family were invited to the ceremony. They attend a speech, a delicious dinner, and a great party. It took place in the evening on Saturday the 17th of November in Pfaffenwaldring 47. The night started with the acknowledgement and certification of all graduating students, each receiving their diplomas in turn. Some of the special students were awarded.

When one of the graduates, Diana Tebaldi from Generation 2016, was asked about her opinion on the night, she shared that she found it to be very pleasant and well organized. She noted that there were more professors than usual but found it unfortunate that some of her classmates were not able to make it. The best part for her was being able to reconnect with all her classmates saying, "since everyone is going on their own path and since we will not be able to meet again, it was a great opportunity to express your wishes and say some final goodbye words to them". Another graduate, Nidal Safarini from Generation 2016, also added to how beautiful the event came out to be. He especially loved that the Persian musical band, the dances, and finger foods which were influenced by the many cultures shared by the MSc. WASTE students. "When my family saw all the nationalities there, they noted that we are from all over the world!" After additional comments on how it was a beautiful gathering he expressed the following: "I felt that we were able to turn this great big world into one, including all these different nationalities in one small community". But who

made it all happen? Well if you assume it is the MSc. WASTE Office, you are correct, but one additional team was also involved: the helping hands of newer generations! The MSc. WASTE Office contributed extensively with finances and organizing, considering it is an annual and recurring event. A HIWI in the waste office, Hector Cañas, shared the work they had to do behind the scenes to make it happen. This included every aspect ranging from coordinating to provide good catering and drinks as well as getting the logistics done for the diplomas. Hector continued to express that "not only did I enjoy helping with the organization and attending the ceremony, but I was also glad to know that the MSc. WASTE Office was so involved. Given our families live so far away, it felt good to have your own MSc. WASTE family here which included all our classmates and professors."

As for the beautifully made frames you might have taken pictures with, along with the tasteful lanterns and centerpieces all around, all decorations were hand made by the active generation of 2018. It is a proud MSc. WASTE tradition for the students of the youngest generation to prepare a gift for the older ones and to help organize this event. One student from 2018, Ananya Ramaswamy, shared her input saying: "Nelson from generation 16 organized the entire thing but almost 15 of us from MSc. WASTE put all the ideas together the day before, sharing pizzas and chips for dinner. I had a great time helping my seniors have a memorable night."

We are grateful to be part of a MSc. WASTE family that is so generous in putting effort and time to making our graduations as special as it always happens to be. As for you, generation 2016, buckle up and wave your MSc. WASTE family goodbye, because a new journey awaits you!

Salua Moussawel
MSc. WASTE student, Generation 2018



Generation 2016 Graduation Ceremony
MSc. WASTE Office files

GO GREEN IN THE CITY 2018



Go Green in the City team
Photo by Miriam Chacón

The past 13th of November I had the opportunity, together with my teammate Mohit Kalra, to represent Germany in the Go Green in the City Challenge. Go Green in the City is an international competition organized by Schneider Electric and was hosted in Atlanta, Georgia, USA this year.

To set the stage, we should look back 5 months earlier when Mohit asked me to team up with him in order to develop a new idea to make cities greener and more sustainable. I found the objective of the competition very catchy for me, as sustainable development is always on my mind and the idea of teaming up with Mohit sounded really good! We both thought that a computer engineer and an environmental engineer would be a good mix for such a competition, as he is doing his Master in INFOTECH. And so, it was! In a couple of hours, we came up with an idea that reduces greenhouse gases and light pollution by dimming the street lights when no car, bike, or pedestrian is using the street. We connected the lights with a Smart Light Mesh Network and Machine Learning to anticipate the light response. Finally, we decided to also target air pollution (of course, doing my Master thesis in the field of air quality and not targeting air pollution was not an option) to monitor air quality with low cost sensors in the same device in order to broadly map the air pollution in the cities, improving traffic management to protect dwellers from traffic emissions.

Our idea was short-listed for the European Regional Competition together with four other teams from all over Europe. They

assigned us two mentors to help refine the concept for presenting it to three judges via Skype. And the surprise came again when we received an email telling us that we would be one of the teams going to Atlanta to represent Germany in the Finals during the Innovation Summit of the company. They gave us two months to distil the concept even more and to build a prototype. Here I would like to thank the department of Air Quality Control for providing us with materials and a special mentioned should be extended to Mr. Laquai, whose help was crucial for build the prototype.

The week of the Finals finally arrived! After a 12-hour flight (including delays from taking off, landing, and turbulence) we stepped into the USA. It was my first time there and I was incredibly curious to see what life on the other side of the Atlantic Ocean looked like. We were tired, but there was no time for Jet-lag! Our first event was a dinner at the Hard Rock Café to meet the other teams. They were from all over the world: France, Spain, India, Algeria, Vietnam, Canada, Indonesia, China, the USA, and Brazil. That night the Asian girls taught us how to say some messages in pictures such as "I love you", "I'm a flower", "I'm a panda", and "I'm cute".

GO GREEN IN THE CITY 2018

The following day we presented our projects after a very inspiring speech from the CEO Jean Pascal Tricoire on Digitalization and Sustainability. We were the last team presenting but that did not affect us in terms of nervousness. We were so captivated with the other ideas that time passed very quickly. I really hope that they will all continue working on their projects to make them a reality. The judges did not tell us the verdict that day but we all still felt very released from the tension since the presentations had finished and we then had the rest of the trip to enjoy. That night we celebrated a successful day by playing golf, or in my case trying my best!

The next day the organizers prepared for us a guide tour through the streets of Atlanta. It was a pity that it was rainy, therefore we had to do it in electric cars. They told us about the history of Atlanta and the history of Coca-Cola, as it was created there. The winner was announced after lunch in front of all the employers, suppliers, and customers that were attending the Innovation Summit. The winning team was from Argelia: Zvirevo Chisadza and Tariro Cynthia Mutsindikwa with their great idea of building an organic photovoltaic greenhouse system to increase crop production and fight for hunger. They did a very good job and we were all very happy for them. After the photo shoot, we went for dinner to a very luxurious restaurant. Knowing that the trip was coming to an end, we stayed awake until very late to reinforce our friendship and to exchange our thoughts and culture.

The saddest day was also the day that I woke up completely hoarse. I was not able to talk at all and I was writing everything in my notebook, even to order a coffee. I should be thankful that it happened on the last day and not the first day! I remember with affection all the hugs and goodbyes that we said to each other. It was very difficult to say goodbye but we all hope that one day we will meet again at some point in some place. I wished them all the best in their careers. They are such nice human beings. The world needs more people like them, students that are willing to think outside the box and do great things.

That last day I took the plane back to Europe feeling inspired and overwhelmed by everything that I experienced. Once in Stuttgart my parents and my sister were already waiting for me to attend the Graduation Ceremony the following day. Everything happened in the same week! But they were not the only ones waiting for me, also my master thesis missed me during those days...

By the way, the registration for the Go Green in the City 2019 has already started, have a look!

<https://gogreeninthecity.se.com/en/challenges/gogreeninthecity>

Miriam Chacón

MSc. WASTE student, Generation 2016



Photo by Miriam Chacón



Miriam and Mohit- Go Green city team
Photo by Miriam Chacón

II INTERNATIONAL MSc. WASTE SYMPOSIUM

The Second International Symposium organized by the MSc. WASTE Office Team was held on November 23rd, 2018. The main objective was to provide an opportunity for professionals in the field of Environmental Studies to exchange academic and technical knowledge.

The event consisted of International speakers who shared their perspectives and experience, giving an insight on how environmental issues and technologies work on different continents. We had the opportunity to enjoy presentations from four professionals coming from around the world. Dr. Francisco Vera, Professor in the field of Energy Engineering came from the Universidad of Cartagena, Spain. Dr. Sophia Ghanimeh, Associate Professor of Environmental Engineering came from Notre Dame University, Lebanon. Dr.-Ing. Regina Matos Jorge, Professor of Chemical Engineering came from the Federal University of Parana. Finally, MSc. Asli Firat, Senior Specialist in Sustainability at T. Şişe ve Cam Fabrikaları A.Ş came from Turkey.

Additional events during the Symposium focused on student presentations and research posters, allowing young professionals and students to be recognized as speakers in an international exposition.

Attendees and presenters were able to share their knowledge, exchange thoughts, and enjoy a network lunch with amazing food. The quality time spent among colleagues from different backgrounds aiming towards the same goals of protecting the environment was invaluable. Sincerely we would like to thank the efforts made by the organizing committee as well as guests and attendants, and hopefully we will see each other next year at the Third International Symposium.

Maria Paula Aparicio
MSc. WASTE student, Generation 2017



II International MSc. WASTE Symposium
Photo by Jeramiah D. Photography

CONFERENCES, NETWORKING AND DIVERSIFYING OF KNOWLEDGE

Here in the MSc. WASTE program we pride ourselves on our diversity. Students come from all over the world to get the chance to study with us in Germany. It is well known that Germany holds a special allure in the technology sector, including our field of study in waste treatment. It is also well known that the protection and maintenance of the environment extends past the borders of Germany. Indeed, past every border. That is also why we are here. To meet people from other countries facing similar pollution issues. We know we need to work together on a global scale to deal with these global problems. What one country does to their air, land, and water can and does have very real impacts on other countries – sometimes ones that are on the other side of this planet.

This is where networking comes in. Having a global community that works towards the same goal is the ideal, but that can only be achieved with an international network. The Second International Symposium is an excellent example of an opportunity for the current students to meet alumni, professors, and profes-

sionals working in the field and to make those critical connections. I had the privilege to ask many of the international speakers that attended the Symposium about their experiences with networking and conferences.

Dr. Francisco Vera García came to the Symposium to discuss his research on cleaning water using zero added energy and producing zero waste. He came representing the MSc. Renewable Energies program from the University of Cartagena. While we students are already studying our Masters, an interesting opportunity for furthering our global knowledge comes in the PhD program on Renewable Energies. Dr. Vera was very pleased with the conference, citing the high level at which students delivered both their posters and presentations throughout the day. He stressed how good it is to see ideas on sustainability from around the world and how attending conferences like the Symposium are incredibly important for students to build diverse understanding while seeing how knowledge gathered in school relates to the real world.

CONFERENCES, NETWORKING AND DIVERSIFYING OF KNOWLEDGE

The second presenter that I was able to discuss networking with was Dr. Sophia Ghanimeh coming from Notre Dame University in Lebanon. She presented her research on anaerobic digestion and the many approaches that she and her team have worked on to improve the wastewater treatment process. During our conversations she told me a story about a research paper she worked on. The paper was on solid waste management in six different countries and how each can learn from the other. It took two years to produce and was just recently submitted as a journal article by the group. One of the amazing parts of the story was that the entire idea came out of a networking experience at a training conference. As Dr. Ghanimeh explained it "The more diversified the group is, the more possibility for rich collaboration." Meeting people and working together should become a priority for everyone working in the field in which we do. When asked for a piece of advice for upcoming professionals, Dr. Ghanimeh stressed the importance of soft skills and networking skills. While grades and technical backgrounds are important, it is the ability to meet people and collaborate that produces great ideas.

The final presenter that I had the honour to interview was Ms. Asli Firat, an environmental engineer for the glass producer Şişecam and a MSc. WASTE alumnus. She spoke du-

ring her presentation about the importance of diversifying your knowledge through the gathering of experiences.

While I was speaking with her, she described one's career as a basket that should be filled with many different things. You should not just take one job and forget about every other position you have held. Bring all the experiences together because in the private sector engineers with diverse knowledge are becoming more and more desirable. Ms. Firat spoke of the importance of networking and conferences through an example in her life. She worked with a green building company before she worked for Şişecam Glass. During a training session she ended up meeting an architect that worked for Şişecam and was trying to find ways to connect the glass products to the green building industry. They kept in touch and it eventually led to Ms. Firat switching companies and developing and implementing a green building certification guide. This guide outlines how Şişecam glass meets requirements for receiving such certifications.

Christina Zeuner
MSc. WASTE Student, Generation 2018

„Clearly there are many benefits to attending and hosting conferences such as the Second International Symposium. It is not just about sharing ideas but also creating contacts. Contacts that can turn into great collaborations or even guide career paths. We need to work together, feed off each other's ideas, recognize the uniqueness of the problems, and develop solutions concurrently. Therefore, we need to network.“



II International MSc. WASTE Symposium - Gen. 2018 students
Photo by Jeramiah D. Photography

INTERSHIPS DURING THE MSc. WASTE

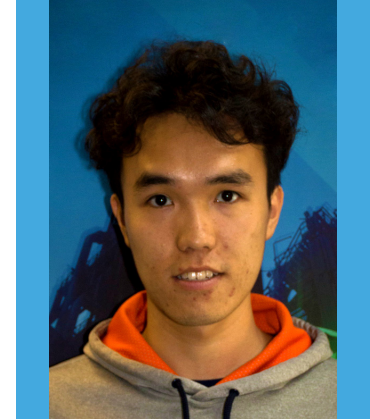
We all know graduation is inevitable. Consequently, hunting for a job will likely be the most urgent task for graduates. One of the ways to increase a graduates job prospects is to do an internship while still studying. The experiences of those students who have already started their internship would therefore be valuable and instructive. We are delighted to have had three students from the MSc. WASTE program acquainted with this process share their experiences gained from participating in different kinds of internships. They brought in their expert opinions and shared highlight while having interned in different organizations. So we present those interview questions below in a way that allow you to gather more detailed information on how an internship may go!



Lichun Lin (L.L.)
 Generation 2017
 German level: A2
 Email: lgiary41795@gmail.com



Rashmi Rao (R.R.)
 Generation 2016
 German level: B1
[linkedin.com/in/rashmi-rao-giriradha/](https://www.linkedin.com/in/rashmi-rao-giriradha/)



Minghao Qiu (M.Q.)
 Generation 2017
 German level: B1.2
 Email: qiumh2323@126.com

1. Did you have any working or internship experience before your current internship?

L.L. I have done an internship in Taiwan EPA (Environmental Protection Administration) for two months. Through this intern, I learn more about environmental policies and legislations that are rarely related what I am doing now. But this experience helps me realize how important it is to protect our environment. And that is why I choose to do the second internship to understand more practical parts, for instance the pollution from automobile and something about liquid filtration.

R.R. Before coming to Germany, I worked as a Project Engineer for 3 years at Wipro Technologies in India. When I came to Germany, I worked as a Hiwi and also took up Student Research Project (SRP) in the department of RdL, IFK at University of Stuttgart. I also worked as Werkstudent at RED GmbH for 6 months. The experience of work during the course of studies strengthened my practical skills, helped me gain confidence in taking up new challenges and focussing my field of interest.

M.Q. Yes, but only in China.

2. Which company do you work for? Which department are you involved with? Which project are you working on?

L.L. I work at MANN+HUMMEL. I am in the department of Liquid Filtration Validation Testing. The project that I am doing now is "Multi-pass Fuel Filtration Testing".

R.R. I am currently working as an intern at Robert Bosch, Stuttgart. The department is involved in carrying out measurement of exhaust gases from automobiles.

M.Q. I work at MANN+HUMMEL in the department Entwicklung Abteilung (r&d) and focus on "Filter entwicklung für diesel wasser abscheidung"

INTERSHIPS DURING THE MSc. WASTE

3. Can you describe the working tasks you are doing now? Can you also describe which skills or knowledge that you learned from the WASTE program have been applied in practice?

L.L.

The lectures related to air quality control helped me in understanding the sources of air pollution and how to measure it. During my SRP, I have worked with devices that measured ambient air. I also analyzed a large amount of data set obtained from the continuously measurement car that were recorded each second. This strengthened my skills of data analysis and experience in handling devices.

R.R.

My job is helping my supervisor do some experiments. In the beginning, I needed to read a bunch of literatures and some ISO norm related to my testing. Actually I just started one week ago. Therefore, I cannot describe it specifically. The WASTE program did help me a lot. Especially since I have done some balloon testing which how to doing a test previously. With this knowledge or skill, I can realize some testing process easily now. My task as an intern initiated with learning a tool developed for making statistical analysis. I am also responsible for using the tool for analyzing the measured data.

M.Q.

I am responsible for testing the efficiency of different filter media as well as making improvements if necessary. Application of mechanical process engineering knowledge (from Dr. Trautmann) and the knowledge of fluid dynamic knowledge (from Prof. Laurien and Krönenberg) help me a lot.

4. When did you start your internship and how did you get it? Can you describe in detail the process from the initial search to finally receiving the internship?

L.L.

I started my internship from 5.11.2018. I applied to it on the website of MANN+HUMMEL. Then I send out resumes both to the company and the responsible professor (mechanical process engineering Dr. Pius) Therefore I got the interview two weeks after. And the interviewer is my supervisor now. He is so nice. During the interview, he introduced his department first, and asked what I have done before.

R.R.

I had applied to internship offers through company websites and also consulted professors regarding the same. The professors of our department are helpful in guiding us and letting us know about the openings. Similarly I was called for one of the interviews. The knowledge from SRP was apt for the interview and my profile was instantly accepted by the company. I have been working as an intern since September 2018.

M.Q.

I started my internship through the online application under the recommendation of Dr. Trautmann. I searched on the official website of M&H on the internet and gave key word of 'praktikum' and clicked the target internship and applied with application documents such as CV, motivation letter, transcript etc. Received the interview offer (or not, then apply for the next one) and went to headquarter for interview and finally got the internship.

5. How do you feel about this internship?

L.L.

So far so good. I like it since I never work in quite a big company and my co-workers are also nice. Although sometimes they don't speak much English, they tried their best to explain it to me. Besides, since they all have abundant work experience before, they also give me some suggestion about my career as well. One of the benefits is that I immersed myself into a German surrounding that probably help my German study as well.

INTERSHIPS DURING THE MSc. WASTE

R.R.

I enjoy working in my current project. I perform measurement of exhaust emissions from various manufacturers of automobiles. As we know, the pollution from automobiles is a world-wide issue and needs to be reduced, I feel that being in this internship I can contribute towards making a clean environment. Having good colleagues and a good supervisor make me feel very comfortable in performing my tasks during the internship.

M.Q.

So far very good. Working environment: 10/10 (new building, can't be better). Job/project satisfaction: 9/10 (interesting work for me, some lab works coupled with designing). Relationship with colleagues: 7/10 (if you really speak good German, you may have a much better score on this issue, if you can speak Swabisch that would be perfect. In conclude, colleagues are very friendly)

6. What is the most important thing you learned from the internship so far?

L.L.

Before this internship, I just want to focus on theoretical work. But after it, I realize I also can learn a lot in a private company. And there is still a variety of things that I need to learn and know.

R.R.

The important concept that I take back home from my internship is understanding that automobiles are one of the major contributors to air pollution. It is our duty to have consciousness about their usage and do regular emission checks.

M.Q.

How to communicate in German with a limited German proficiency.

7. What is your biggest academic or career-related regret and why? What are your expectations regarding your future?

L.L.

I never regret the choice I made to come to Germany because I met a bunch of friends from different countries here and I broadened my horizon at the same time. In addition, I also have more chances to join international conference in Europe. I hope that I can learn German well and have more opportunities to feel their culture by communicating with local people.

R.R.

Not to term it as "regret" but I would have wished to have visited Germany much earlier and spend more time by now. My dream is to implement my knowledge by working for an organization for the benefit of environment.

M.Q.

Nothing really to regret so far. For the expectation, I would learn more senior mathematics and physics knowledge can be more helpful. Try to find a job in Germany and work for several years. And possibly back to China afterwards.

8. What is your biggest academic or career-related regret and why? What are your expectations regarding your future?

L.L.

If I had a time machine, then I would go back to my 1st day in the faculty and relive the moments again with my classmates and professors. I would want to repeat the same and do nothing differently.

R.R.

I want to learn more German. Then I can have more job options.

M.Q.

Possibly nothing will be changed. Most things go on schedule. I'll make the same choice if I go back.

Heidi

MSc. WASTE student, Generation 2018

MSc. WASTE STUDENT IN GLASGLOW - ERASMUS

Aside from the MAUI double degree program, MSc. WASTE students can take advantage of the ERASMUS-exchange program and study for one or two semesters in another country in the EU. I decided last year in December that I wanted to study abroad for one semester, as many MSc. WASTE students already do. After handing in the application in January, a few months of waiting, and some organisational work - like the learning agreement in which the classes I wanted to take were listed - I finally took a flight to Glasgow during the exam period in September. Directly after arriving I noticed that the people were friendly and wanted to help but I also did not understand as much as I expected. A lot of people were talking Glaswegian, the local dialect, and even after a few months it is still very hard to understand some of them (I heard from a local tour guide that even for him it is sometimes hard to understand what people say - and he is from Scotland).

Nothing really went as planned, the learning agreement changed 'a bit', the long excursions on the weekend I had in mind were replaced by shorter tours, so I could study, and I got to experience the National Health Service. The semester here is shorter than in Germany, starts earlier and is a lot more intense, with all the assignments one must hand in during the lecture time. I am therefore happy about some changes in my learning agreement that allowed me to take only five classes which are

also closer to my interests instead of the original six. The exams will take place in a two-week period in December, which is nice, because it hopefully makes the holidays a bit more relaxing before I must study for the exam I skipped in September.

As I am sometimes saying as a joke, I did not come here to improve my English, I came to speak more German than in Stuttgart, since a lot of the exchange students are from Germany. The good thing about so many exchange students is that you will always meet other students on the day trips from some local companies going to sights and places all around Scotland. After visiting some beautiful castles, nice towns, and the Isle of Skye with its impressive landscape, not to forget Loch Ness and other places, I have to say that it is too hard to say which of these places are the best. Even still there are some places left I want to see, not only in Scotland but also in the rest of UK.

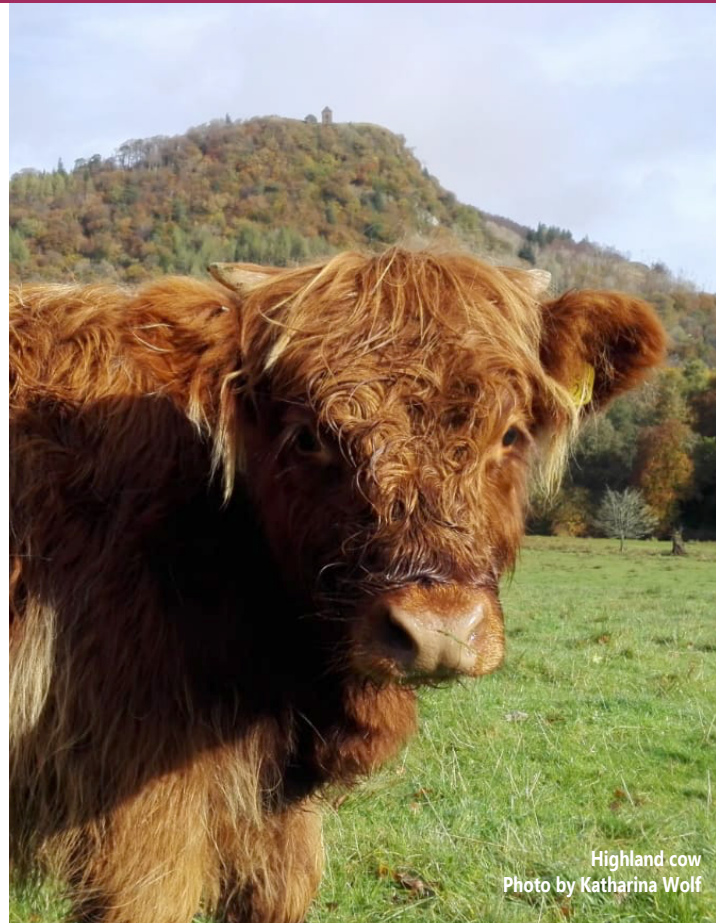
One thing I realised when visiting other places is that my pictures are not always the typical pictures of tourists - a waste container here, an air quality monitoring station there - but I enjoy my view as a MSc. WASTE student in this way.

Katharina Wolf

MSc. WASTE student, Generation 2017



Scot WASTE
Photo by Katharina Wolf



Highland cow
Photo by Katharina Wolf

HOLIDAYS WITH WAREM

Shortly before Pentecost holidays this year, MSc. WASTE students received an email about two places for the WAREM excursion to Hamburg during the holidays. Since I wanted to make my plans rather spontaneously, this was an opportunity I could not miss. So, while most other MSc. WASTE students enjoyed their holidays here, I went to Hamburg with over 20 other students with the goal to learn something about water supply, wastewater treatment, flood protection, the Wadden Sea, and naval architecture.

On the way to Hamburg we had our lunch break at the Border Museum and when we arrived, we had some free time in the evening to see a bit of the city. In the next few days one of the waterworks supplying Hamburg opened its doors for us as well as the port authority, where one employee even demonstrated how the door in the flood protection wall closes. We also went to the 'Wasserforum' Museum which is about the history of water supply in Hamburg and water as a resource. In addition, we saw the ship-lift in Scharnebeck, an impressive way to overcome the height difference between two canals. Other interesting sights were a fishladder, pumped hydro power

r, a boat tour through the harbour (to celebrate the birthday of Anne, the course director of WAREM), a walk through the

Wadden Sea and of course, the most interesting part for a MSc. WASTE-student: a wastewater treatment plant!

The wastewater treatment plant in Hamburg is amazing! Treating about 350 000 m³ per day, the enormous plant has two locations because of land scarcity in the harbour. The view from one of the 10 egg-shaped digestors was impressive and the dimensions of the mono-incinerator for the sludge (of which we unfortunately just saw the building) topped my expectations. Altogether, with the different sights on the trip, places one normally cannot visit, the bus trip with a bunch of nice people, and stops along the way to stretch our legs (for example on the longest extension bridge in Germany, near the Rappbode-Talsperre) I would highly recommend it for everyone interested if places are available next year!

Katharina Wolf

MSc. WASTE student, Generation 2017



Holidays with WAREM - Hamburg Harbor
Photo by Katharina Wolf

MSc. WASTE SUMMER PARTY 2018

Continuing the tradition, the WASTE Summer Party 2018 was full of fun, excitement, teamwork, games, food, and much more. As is the case every year, the event took place on the last Friday of July and we all started to prepare for it two weeks before. We divided the tasks into different teams. Nelson and our director Kristy guided the teams to take care of the different departments such as food, set-up, cleaning, bar, and games.

The set up team lead by our class speaker Anas started their work in the early morning and made sure that all things were in their place and that the IFK garden was ready to host the event. The Shisha garden and the bar were the places of attraction that people enjoyed the most. The barbeque served by Ioannis, Jorge, Evan, and Qiu were too delicious to miss. The drinks prepared by Ayumi, Daruska, and their team refreshed the mood of the event. Dinner tables were set up in the garden where people enjoyed the cuisines, had laughs with their friends, and also cheered on the bubble soccer players.

I could not possibly write this without explaining bubble soccer! There is no need to say that the highlight of the event was none other than this game. This new game brought to us by Jannete, Carla, and Freddy really defined the WASTE Summer Party. Participants were inside a big bubble, like a balloon, which made

it hard for them to move. Soccer was played between these two teams wearing these bubbles and it was hilarious to watch whole game.

Many students from generations 2016 and 2017, professors from many departments and their families, as well as PhD students from IFK graced the occasion with their presence. Our new course director Kristy anchored and directed the event very gracefully until the end. Though we all missed Carolina a lot, Kristy made sure that this Summer party continued the successful trend. There was one surprise for some of the students as well. Poon and Katharina, who will be visiting Brazil and UK respectively this semester as exchange students, were presented a gift by Anas on behalf of the entire WASTE family and wished them all the best for their further exciting journey. As the event progressed to the end there was a dance, and everyone was on the floor. It was exciting to watch our emeritus professors dancing and enjoying the music equally like the students. With all these exciting memories, we ended the event around midnight and were happy to close it off while keeping in mind to make it even more exciting next year.

Mukul Biwara
MSc. WASTE student, Generation 2017



Bubble Soccer - Summer Party 2018
Photo by Ioannis Chourdakis

AOK - HEALTHY COOKING WORKSHOP

save **on** foods



MSc. WASTE Students in the AOK Healthy Workshop
MSc. WASTE Office files

On 12th of July, AOK Health Insurance offered a one-day Healthy Food Workshop for MSc. WASTE students. The workshop took place in the AOK office in Berliner Platz, where there were modern kitchens fully equipped with the necessary cooking equipment for our use. Under the supervision and instructions of Mr. Dr. Wirth, we cooked healthy and easy food with many fresh ingredients. Furthermore, we created cool, healthy, and vitamin-rich smoothies.

At the end of the meal we tested our creations and enjoyed our tasty smoothies. All day was a lot of fun. It was a happy break from the continually intense daily life of a student. We got ideas for new recipes and we learned that you do not have to spend a lot of time for cooking, but with simple, fresh, and healthy

ingredients you can easily create delicious food. For both students and office workers who work intensively, they often do not have much time for cooking homemade food and therefore resort to eating unhealthy fast food.

I hope that similar workshops will be resumed next year and attract more participants! And welcome you to share your new idea about the healthy food, healthy menus, and healthy life with AOK.

Heidi
MSc. WASTE student, Generation 2018

STUTT GART CULTURAL ACTIVITIES

3. Stuttgart Summer Festival

Stroll around, sample delicious food, relax, dance – this elegant open-air festival is held annually at the beginning of August in the main Palace Square and in the Palace Gardens around the lake in front of the State Theatre. The white pavilions, countless fairy lights, and lanterns, the beautiful backdrop of the New Palace, a wide choice of culinary delights and a range of musical performances to suit every taste, give this chic summer festival its incomparable flair.

02 – 05 August 2018

Location: Schlossplatz Stuttgart (Palace Square),

<https://www.stuttgart-tourist.de/en/e-stuttgart-summer-festival-2018>



Photo from gstuttgart-tourist.de

4. Stuttgarter Weindorf

Stuttgart's „Wine Village“ opens its doors for a 12-day extravaganza of quality wines and culinary specialties of the Swabian region. In the Market Square and Schillerplatz, and all along Kirchstraße, wine and food lovers can make themselves comfortable and indulge in local specialties, washed down by their favorite vintage.

29 August to 9 September

More information at: <http://www.stuttgarter-weindorf.de/english>



STUTT GARTER WEINDORF

Schillerplatz | Kirchstraße | Marktplatz

Photo compendium from stuttgarter-weindorf.de



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**M.Sc. Air Quality Control,
Solid Waste and Waste Water
Process Engineering**

WASTE