



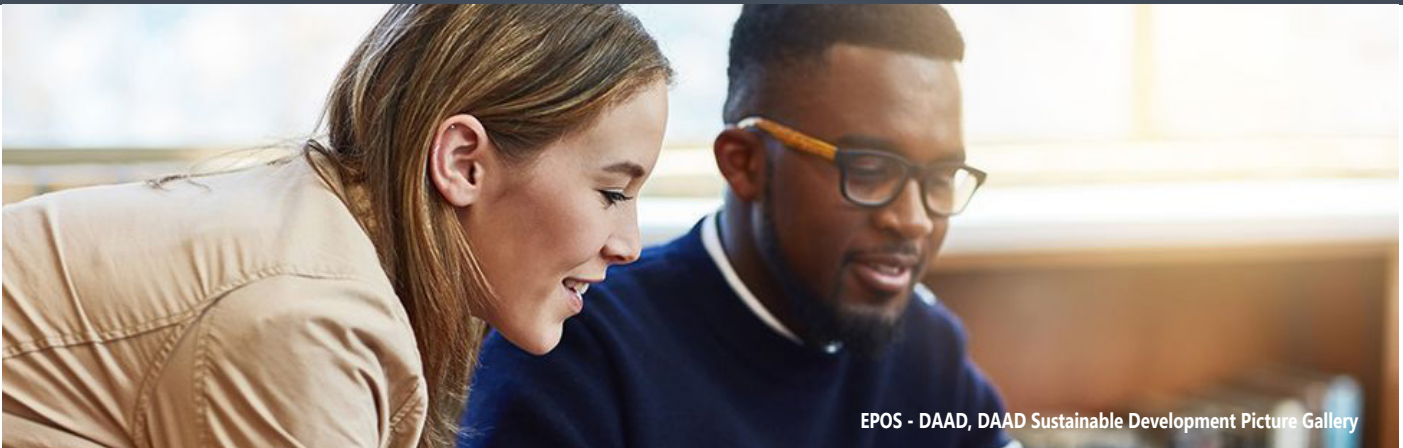
M.Sc. Air Quality Control,
Solid Waste and Waste Water
Process Engineering

(WASTE)

WINTER SEMESTER 2019/2020 - ISSUE 23

NEWSLETTER

M.Sc. WASTE IS NOW PART OF THE EPOS-DAAD PROGRAM!



EPOS - DAAD, DAAD Sustainable Development Picture Gallery

And the award goes to... M.Sc. WASTE! *Crowd goes wild!*

Every distinguished award comes in a sealed envelope and the story of this one is no exception. The scene was in the afternoon on a Thursday in mid-September with the temperature slightly above the seasonal average in Germany. I was waiting patiently for a colleague of mine to make some copies in the upstairs copy room. Then, I saw it: An ordinary beige A4 envelope with the name M.Sc. WASTE on it. So far nothing particularly special. I hesitated for a moment before grabbing it from the mailbox. Once I did it, I very quickly realized that the envelope was nothing ordinary: It was a letter from the DAAD. We at the M.Sc. WASTE office had been waiting for that letter for more than six months and were incredibly eager to know what was inside. Was all the effort we put into our proposal enough? Yes, it sure was!

Over the last decades, the M.Sc. WASTE has been educating professionals from all over the world in the field of environmental engineering and technologies. This year, the M.Sc. WASTE was selected for the DAAD Program "Development-related Postgraduate Courses – (EPOS)". Every great accomplishment deserves a round of applause, in this case the appreciation goes to the M.Sc. WASTE Office Team, led by Prof. Dr. Andreas Kronenburg. I remember writing the proposal to get the scholarship with my colleague Sofia Engelmeier. We made sure to include all the high-quality elements that make the M.Sc. WASTE stand out from the crowd.

The M.Sc. WASTE curriculum, lectures, alumni network, and intercultural activities captivated the DAAD Selection Committee. It was not an easy task, as only eight Master Programs in Germany were selected in 2019. We now can proudly say that our program is a part of EPOS-DAAD until 2027.

The EPOS-DAAD program is aimed to support students from developing countries with scholarships to finance their M.Sc. or PhD studies in Germany. Scholars will be future decision-makers in their countries and valuable partners for Germany. The upcoming M.Sc. WASTE Generation 2020 will be the first ones to enjoy the benefits of the EPOS-DAAD Program. A selected group of admitted students will be beneficiaries every year. This scholarship will allow scholars to fully dedicate their time to their studies without worrying about financial constraints. Applicants interested in joining the M.Sc. WASTE with the financing from EPOS-DAAD must have in mind the 2-year professional experience requirement. Moreover, they must be aware of special deadlines and documents that require submission. All the updated information and application procedures for the EPOS-DAAD program are stated on the website: www.waste.uni-stuttgart.de.

The participation of the M.Sc. WASTE in the EPOS-DAAD will hail the start of a new era. One of supporting young, outstanding professionals from around the world to fulfill their dreams of studying abroad, independently of their financial situation.

Nelson Rincón Soto, M.Sc.
M.Sc. WASTE Course Manager

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INTRODUCING THE M.Sc. WASTE OFFICE TEAM

Through this article I would like to introduce the “new” team of our M.Sc. WASTE Office. I wrote new between quotes because we already met some years ago, when each of us were facing very interesting challenges in our lives. My name is Dr.-Ing. Carolina Acuña Caro and, since the year 2016, I have been the course director of the Master Study Program Air Quality Control, Solid Waste and Waste Water Process Engineering, WASTE. During that year I had the pleasure to welcome my first generation, meeting a nice group of motivated students, with lots of ideas and dreams..I would say that was the perfect timing from both sides, since I was also starting and, as alumna of this wonderful program, had also a bunch of suggestions and lots of energy to put on new projects in order to improve what we already had.

I still remember the day that Mr. Nelson Rincón Soto came to our office and offered us very kindly all his support in any kind of activities that we would like to organize. Of course, with this spirit, he was elected as class speaker of his generation. That was the start of a very fruitful teamwork. From the creation of a new logo for the program as well as the modernization of our corporate design to the realization of the most ambitious project that we have faced until now, as it was then that the International Symposium, which takes place every November, began. With all this background, it is

not a mere coincidence that Mr. Rincon Soto joined the staff of our office. During my parental leave period he supported my deputy, Ms. Louiza Avgeropoulou, by assuming the role of course manager of M.Sc. WASTE.

Another very important member of this new constellation at the office is Ms. Grecia Solis Castillo (s. article). She also started her collaboration with us as class speaker of Generation 2016. Her commitment was to keep the office informed about all the academic issues that concerned the students by proposing possible solutions and acting as a kind of “mediator” between her colleagues and professors/lecturers and also our office. We really appreciate her work and are happy to welcome Ms. Solis Castillo as part of our team since November 2019 as course manager of our Master Program.

Since I am still on parental leave, I will be working for the winter term 2019/2020 and summer semester 2020 only half-days, from Monday until Wednesday. Ms. Solis Castillo will be my direct support at the office, while Mr. Rincón Soto will be mainly in charge of the organization of events and extra-curricular activities. Together we would like to welcome your ideas, constructive comments and suggestions anytime! Our M.Sc. WASTE Office has always the doors open for you!!

Dr.-Ing. Carolina Acuña Caro
M.Sc. WASTE Course Director

My Background:

I come from Santiago, Chile and I am alumna from Generation 2004. I got my Ph.D. at the Institute of Combustion and Power Plant Technology, IFK, with the topic “Chemical Behaviour of Mercury in Wet Flue Gas Desulphurisation Systems”. I have 4 years of work experience here in Germany at the company EISENMANN SE Anlagenbau, where I was part of the environmental department and I was working on the area of Hazardous Waste Combustion Plants design and planning. It is really a pleasure to come back to my dear family of the M.Sc. WASTE!!



M.Sc. WASTE Office Team - Photo by Miriam Chacón

INTRODUCING THE M.Sc. WASTE OFFICE TEAM



Grecia Solís - Photo by Claus Nagel

I am Grecia Carolina Solis Castillo and I started working at the WASTE Office in November, 2019 as course manager. I am from Lima, Peru and I have a B.Sc. in Industrial Engineer and a M.Sc. in Air Quality Control, Solid Waste and Waste Water Process Engineering (M.Sc. WASTE) at the University of Stuttgart. I belong to Generation 2016 and I finished my studies in January 2019 with a master thesis in the topic of air quality control. I have 5 years of work experience in Peru as an industrial engineer in different international companies belonging to the sectors of energy, logistics, manufacturing, and retail.

When I saw the job offer to be part of the WASTE Office (as a half time worker) I did not hesitate to apply. In that moment, I felt that I had the necessary requirements for this job since I can give my experience and knowledge gained during two years as class speaker and one and a half year as HiWi at IFK (Institute of Combustion and Power Plant Technology). Additionally, the advantage that I found in this job was to have the opportunity to join the department of Air Quality Control at IFK as a research scientist (half time worker as well). In fact, next year I am planning to start my doctoral studies in the same institute.

Even though this job is challenging – since I must report to two different departments – I feel happy to work directly with Dr. Carolina Acuña Caro and Nelson Rincón Soto at the WASTE Office and with Dr. Vogt in the Air Quality Department. I feel I am part of a great team!

In the WASTE Office my tasks are to give advise and guidance to students from M.Sc. WASTE and M.Sc. Energietechnik, double degree students (MAUI - Master's Degree Program - Meio Ambiente Urbano e Industrial; Urban and Industrial

Environment) at the Universidade Federal do Paraná (UFPR) in Curitiba, Brazil, and ERASMUS Students as well as other administration/academic activities. At the Air Quality Control department my task is to research about the feasibility of using low-cost sensors to be used in indoors and outdoors air quality measurements.

Talking more about me, I am passionate and interested in sustainable topics, especially the ones related to the conservation of the environment. As a result, I am one of the founders of the NGO: „Recycling Peru“ in Germany whose goal is to manage environmental and social projects in low-income districts in Peru. Currently, we have a project related to plastic sorting and recycling. This project is financed by the CIM – GIZ (Centrum für Internationale Migration und Entwicklung). I have lived in Stuttgart, Germany for three years now and I can say that this country gives many opportunities to the people who really want to progress academically and professionally. A piece of advice to every foreign student in Germany: learn German! By experience, I would say that the German language has opened many doors for me.

Grecia Solis Castillo, M.Sc.
M.Sc. WASTE Course Manager

III M.Sc. WASTE INTERNATIONAL SYMPOSIUM

The third International M.Sc. WASTE Symposium organized by the M.Sc. WASTE Office Team and students was held on November 8th, 2019. The agenda for the symposium was Waste to Energy and speakers from all over the world came together to talk about research advances in the matters of waste management and offered suggestions for dealing with one of the most crucial waste challenges of our generation.

The Symposium was a congregation of international speakers, researchers, and students who shared their research and exchanged ideas on an international platform.

The symposium had informative presentations from four international speakers. Dr. Petros Gikas, Director of Design of Environmental Processes Laboratory came from the Technical University of Crete, Greece. Dr. Hervè Boileau, professor in the field of Sustainable Hospitality and Anaerobic Digestion at University Savoie Mont-Blanc (USMB), France. Dr. Arwa Abdelhay, professor of Civil and Environmental Engineering at German Jordanian University (GJU), Jordan. Dr.-Ing. Hans-Joachim Gehrman, group leader of Combustion Technology at the Institute for Technical Chemistry of Karlsruhe Institute of Technology), Germany.

III M.Sc. WASTE INTERNATIONAL SYMPOSIUM

The symposium also hosted diverse conferences from speakers like M.Sc. Ronny Hanich from the Fraunhofer Institute for Chemical Technology and Dr. Alexander Los from Erasmus University Rotterdam. Additional events at the symposium focused on student conferences and research posters by students at M.Sc. WASTE and start up presentations by Recycling In Dorms, a student-run initiative for efficient waste separation and collection in the university dorms and CALYPSO, a startup creating digital platform for waste mapping and management.

The symposium was an opportunity for students, attendees, and speakers to brainstorm over some of the most crucial waste challenges of our generation and network with a global community striving towards the same goals. The focus was to introduce ideas to shift from conventional to new and innovative non-conventional solutions.

Exchanging Ideas and Promoting a Demand Driven Research

The interdisciplinary and international nature of the WASTE program brings together people from all over the globe to be part of a program that deals with the most crucial waste challenges of our generation. The idea is to gather a diverse group with different academic and professional backgrounds together to advance an exchange of talents and skills to nurture innovative solutions to our common problems. It is true that all countries around the world have their own waste problems. The characteristics of the waste they deal with, its properties, and the sorting methods might be different but at the end of the day, all countries around the globe need a strategy for solid, air, and water waste treatment. By exchanging ideas and building on each other's unique skill set we aim to accomplish together the goal of environmental sustainability in air, water, and land.



M.Sc. WASTE III International Symposium - Group Picture - Photo by Jeramiah Backman

The III M.Sc. WASTE International Waste Symposium was a platform for experts and scholars around the world to congregate and deliberate on the issues of waste. I had the opportunity to interview some of the guest speakers at the symposium and all of them spoke about the value of such a convocation in sharing of ideas and triggering new research. Dr. Hans Joachim Gehrman presented on the topic of Chemical recycling of plastic wastes.

In his interview he quoted "the new generation of WASTE are explorers who come from different corners of the world to seek out solutions to a global challenge". He recognized the value of further international collaboration for achieving

a shared goal of environmental sustainability. He encouraged the efforts of people who developed this conference and recognized how important it was, especially for new scientists and thinkers working the field of waste, to network with the researchers, lecturers, and invited speakers from other countries and also to present their scientific work and get it reviewed from waste experts. Dr. Gehrman also emphasized on the opportunities of studying in Stuttgart, with its high scientific level offering possibilities to collaborate with other institutes like the KIT, the Max Planck, the Fraunhofer Institute as well as with industries that are willing to support new projects and invest in new technologies.

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III M.Sc. WASTE INTERNATIONAL SYMPOSIUM

The second speaker I had the opportunity to interview was Dr. Hervé Boileau who came representing the field of sustainable hospitality and anaerobic digestion from the University Savoie Mont Blanc, France. He presented on the practical aspects of Incineration and Biogas production from Solid Waste. During the interview he spoke about how important it was to meet people in person, rather than talking to them online. He said symposiums, like the International M.Sc. WASTE Symposium, enrich the exchange of ideas and further research. He stressed that we need to change the behaviour of people to solve the problem of waste management and that it is best to solve them upstream. We do not just need new technologies, we also need new behaviours. Dr. Petros Gikas spoke about using pioneering technology like micro screening to move towards energy positive waste water treatment plants. He spoke about the opportunity for students to know what is going on in labs and to be closer to what is happening at the forefront of waste technology.

The final presenter I had the honour to interview was Dr. Arwa Abdelhay. Dr. Arwa Abdelhay came to the symposium

to discuss her research on advanced and innovative technology for industrial wastewater and grey water treatment. She was very motivated to support the new generation in this initiative towards dealing with waste. She was pleased that the symposium brought to attention the pioneering research topics in solid and waste water treatment. According to her, students at M.Sc. WASTE are the future of research and, by conveying students the right message, they can work on the right fields that the market needs. She described it to be an opportunity to focus on research that brings real value to the world. Working on something that is needed for the industries as well as community in general is what will bring value to the society and to the people contributing to it.

Events like the III M.Sc. WASTE Symposium highlight the uniqueness of the M.Sc. WASTE program. The symposium and the speakers provided us with a broader perspective about the global impact of waste and the ongoing research and reminded that it is essential to work together, improve collaboration, and promote demand driven research to make the world a better place.

Pawan Bhojar
M.Sc. WASTE Student, Gen. 2019



CHIDON'S AND SINDHU'S INTERVIEW

In the previous edition of the Newsletter two incoming students of Generation 2019 were interviewed about their expectations and previous thoughts about the M.Sc. WASTE program. Now we want to show the initial impressions and opinions about the program.

1. It is been a few months since you arrived to Germany, what were your first impressions about Germany?

CHIDON: Time, everyone keeps and adheres to time.

SINDHU: My first impressions were pretty much good about Germany! I did not find any difficulties in my initial days here.

CHIDON'S AND SINDHU'S INTERVIEW



INTERVIEWED 1:
 Nickname : CHIDON
 Fullname : CHIDIEBERE O. OKEKEOZOR
 Nationality: Nigerian
 GENERATION : 2019 (Class Speaker).

Chidon Chidiebere - Picture by Jeramiah Backman



INTERVIEWED 2:
 Nickname: Sindhu
 Fullname: Sindhu Shankar
 Nationality: Indian
 GENERATION: 2019

Sindhu Shankar - Picture by Jeramiah Backman

2. Have you had any difficulties with the language?

CHIDON: Yes! German is tough to learn and practice.

SINDHU: Yes! I had some difficulties with the language, but I think that with time and effort it is possible to finish the master with a good German level.

3. Is it the M. Sc. WASTE fulfilling your expectations?

CHIDON: Waste Water and Industrial Water Treatment are my key areas of concern. I find the course to be fulfilling my expectations.

SINDHU: Yes! As of now the MSc. WASTE course is fulfilling my expectations.

4. What is your favorite aspect of the MSc. WASTE now?

CHIDON: To be candid with you, the incorporation of an optional internship into our Master program makes it quite interesting. I want to explore an opportunity via an internship plan.

SINDHU: There is no particular aspect which is my favourite in M.Sc. WASTE course but I would say that the fact that everyday I am getting too explore and learn new concepts stands out.

5. What do you think about the interculturality of your class?

CHIDON: It is awesome! The interculturality of my class is amazing, we all relate together as family without cultural bias.

SINDHU: Interculturality in my class helps me in exploring different traditions and cultures as well as helping with learning a lot of new things related to waste management.

Andrea Marín
 ERASMUS Student, 2019

STUDENT RESEARCH PROJECTS

As M.Sc. WASTE students one has the opportunity to complete a practical project called a Student Research Project. This option is available for all the students as 12 ECTS elective credits. The projects must be done in one of the institutes with a supervisor during 6 months.

The amount of topics available to conduct research projects

in are huge because the project can be involved in any of the three specialty fields of the master program.

To give an example, Kathryn Molina and Diego Álvarez (Gen. 2018) have shared their personal experience doing this program option in the area of Air Quality Control and Talal Alabdallah (Gen. 2018) in the field of biogas upgrading.

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STUDENT RESEARCH PROJECTS

Air Quality Research Project: Kathryn Molina and Diego Álvarez

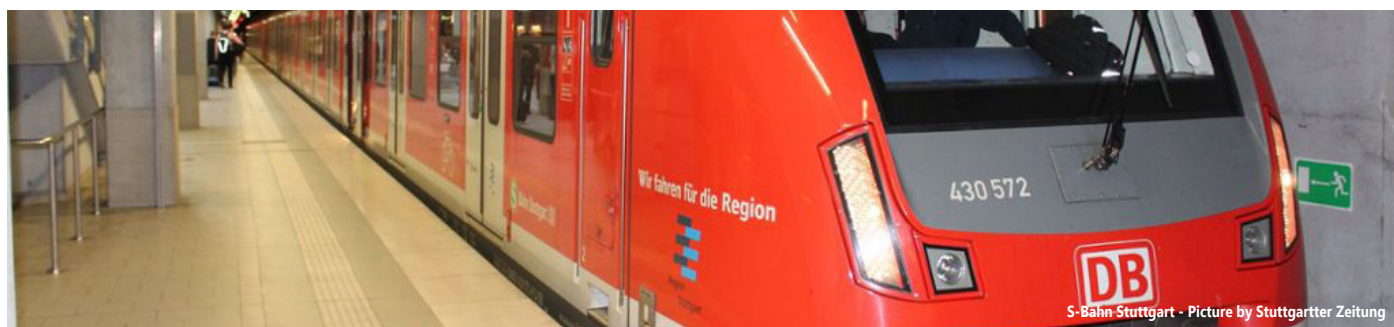
On average Europeans commute 1 hour and 24 min per day to work. As a result, traffic is a major source of particulate matter emissions in the air. While taking the subway is an environmentally friendly alternative to improving air quality, research has shown that high concentrations of airborne particles are present on the subway platforms and tunnels.. The particulate matter is sourced from outside contaminants entering the tunnels and underground stations, from particles generated underground due to mechanical abrasions, and from the re-suspension of deposits due to wind turbulence from passing trains. The combination of an increased level of particulate matter and confined areas underground presents a potential health risk to regular commuters and work staff.

Therefore, our focus for this project is to determine the concentration and size distribution of the particulate matter present inside the trains and underground stations of the S-Bahn network of Stuttgart.

The measurement plan for this project was written and presented last semester in the class Measurements of Air Pollutants. One part of the class was to write the measurement plan (with help from Dr. Vogt), while the other part was involved learning about various air measurement equipment and their measurement principles.

This project has been a great opportunity to gain hands-on experience putting our measurement plan into action. Initially, we thought we had it all planned out on paper, but when we started preparing for our measurement campaign, we realized there were a lot more details that we needed to work out as a team. We also learned how to set-up and use the different equipment that we were taught about last semester. Specifically, we learned how to use devices that measure fine and ultra-fine particulate matter, black carbon, and meteorological data. While the project has been challenging, it has also been rewarding to begin our initial data analysis to determine the real condition of the air quality.

Andrea Marín, Kathryn Molina and Diego Álvarez
ERASMUS Student, 2019 and M.Sc. WASTE Students, Gen. 2019



Biogas upgrading Research Project: Talal Alabdallah

I have always been interested in renewable energy resources and their applications. It has always been a passion of mine to understand how they are designed and how they work. This is exactly why I decided to pursue this research project. I started searching about the biogas and its upgrading technologies once I arrived in Germany, then, I realized how this project can enhance my knowledge and help me in shaping an extraordinary career.

From my point of view, I see that our community does not just need engineers with comprehensive understanding for science, but it requires engineers with expertise in various adjacent disciplines. Nowadays, renewable energy systems are part of those abilities which I believe it is required in tackling real life problems, for instance, the abatement of CO₂ global emissions. This research points out the possibilities which are available to enhance the CO₂ absorption process of an installed pilot plant via chemical absorption with amino acid salts solvents. Furthermore, the strip-steam operation of a pilot plant that is in IFK for the CO₂ capture with potassium glycinate (K-Gly) and potassium

threonate (K-Thre) solutions was conducted. In the frame of this research, a process simulation was built in Aspen Plus V10®. The enhancement process was achieved by adding an internal recirculation for the absorption column, which used to study the effect of the inlet temperature, amount, and the inlet height to absorber of recirculated loaded solvent. That would be my small contribution towards the topic, and I hope it broadens research on the subject, to eventually dampen this significant problem. Above all, it is recognized that firm knowledge in a variety of subjects and having the courage and ability to utilize it is essential.

I would like to thank from my deepest sense the Institute of Combustion and Power Plant Technology (IFK) at the University of Stuttgart for letting me have the opportunity to perform this research project. A special acknowledgment to my supervisor, Nelson Felipe Rincón Soto, who was always willing and ready to support me by utilizing his experience.

Talal Alabdallah
M.Sc. WASTE Student, Gen. 2018

INTERNSHIPS DURING M.Sc. WASTE



Picture by Kelly Rini

Picture by Jeramiah Backman

Kelly Rini

Diego Lucio

One of the many opportunities that students of the M.Sc. WASTE program can utilize during their studies is working directly with a company. A job with a German company gives students much needed experience in an environment outside of school. Some ways that a student can gain this experience is by becoming a Werkstudent or by completing an Internship.

Two students from generation 2018, Diego Lucio and Kelly Rini, both work for Fichtner Water & Transportation GmbH and have answered some questions about the process of getting the jobs and what the experience is like.

1) Where do you work and what is your job title?

Diego: Since the 15th of October 2019 I have been working as a Werkstudent at the company Fichtner Water & Transportation GmbH (FWT). As the name implies, a Werkstudent is a Bachelor's or Master's degree student who gives support to a specific department inside a company. A Werkstudent's priority, however, must be their academic studies. For this reason, the German law allows only a of maximum 20 working hours per week.

Kelly: I am a Praktikantin (student intern) at Fichtner Water and Transportation, an international consultancy.

2) What types of projects does the company typically do and what specifically do you work on?

Diego: The business sectors closely related to the M.Sc. WASTE are: water supply and sanitation, waste management, hydraulic engineering, and environmental planning. I work in the department of business development, where we receive invitations to participate in projects as a consultant or main contractor. My activities comprise the preparation of simple documents, such as resumes of every expert who will be assigned to the corresponding tasks, or the selection of previous projects to demonstrate the experience of the company and selected experts to properly manage the one under tendering phase.

Kelly: The part of the business that my internship is in typically works on design and construction supervision of water and wastewater infrastructure projects around the world. This includes water and wastewater treatment plants, sewer

or drinking water systems, pump stations, sanitation, water resources, etc. There are also different parts of the business that focus on solid waste, transportation, energy, etc. So far during my internship, I have mainly worked on putting together a technical proposal and work schedule for a project using funding from a development bank to design and build a water transmission pipeline to a region without existing access to safe drinking water.

3) How did you go about finding the job and how was the interview process?

Diego: During the 2nd semester, the FWT Managing Director presented a case study in one of our lectures, I got very interested in the company's field of application and decided to send him an email looking for a place in this enterprise. Fortunately, he emailed me back with an invitation to an interview. The process was simple, I had one interview with him, where we mainly talked about the types of projects in which FWT is involved. Then I had another one with the Manager of the Business Development Department, where he explained to me the activities I would do as Werkstudent.

Kelly: The director of the business came as a guest lecturer and spoke to my „Design of Wastewater Treatment Plants“ class. He introduced us to his company and some of their infrastructure projects in different parts of the globe. I enjoy working on international projects and my background is in civil engineering, so I found it all very intriguing and as well as rewarding. I emailed him my Lebenslauf (CV) and expressed my interest in an internship. Then we set up an interview.

Continues >>

INTERNSHIPS DURING M.Sc. WASTE

4) What is the commute like/how is the working atmosphere/German level requirements and usage/other general things about working in Germany etc.

Diego: Germans are really dedicated. When it is working time, they focus on it. During the lunch time, however, we speak of everything but of work. About the usage of German, I usually try to speak it with my colleagues when the conversation is not so relevant. Nevertheless, I switch to English when I talk to my boss because I do not want to miss any important information that can affect the results of my activities.

Kelly: The office is located near an S-Bahn stop in Stuttgart, so it is easy to take public transportation there from campus everyday, it only takes about 30 minutes. The working atmosphere is comfortable, professional, and it is easy to focus on your work. I have found that the stereotype is true: Germans like to be very productive in the office. There is even a Kantine (cafeteria) in the building where they have tasty and affordable subsidized lunch options.

My projects are all international, so the lingua franca or working language is English. The office is definitely still a German

workplace, so it is helpful to be conversational in German when speaking with colleagues, but it is not absolutely required to be fluent initially to get an internship. I am currently in B2.

5) Anything additional that you would think is valuable for students looking for an internship to know

Diego: To my classmates and other students who would like to stay in Germany after getting their Master's degree, I would recommend to start looking for a Werkstudent position or a Praktikum. I really believe that this could make the difference because once you are part of a company, regardless your position, you have more opportunities to stay in such company as an employee or at least to obtain a thesis topic.

Kelly: If there is ever a guest speaker visiting one of your lectures, you should definitely plan on going to class that day! You might discover something that you are really interested in or you can develop your professional network by connecting with the guest lecturer, which could lead to further opportunities.

Christina Zeuner
M.Sc. WASTE Student, Gen. 2018

HiWi JOBS DURING M.Sc. WASTE

Air Quality-related HiWi: Experience from Ananya Ramaswamy



Picture by Jeramiah Backman

Finding a HiWi and finally having one was a great experience for me. In this article, I will be sharing my experiences on how to find a HiWi job as a student at the University of Stuttgart.

My HiWi is in the department of Reinhaltung der Luft (RdL) at the Institute of Combustion and Power Plant Technology (IFK). My job is directly related to measurement of NO₂ using passive samples.

This HiWi was such a great opportunity for me to gain practical experiences on the work life here in Germany, which is quite different from my home country of India. It has also helped me develop and gain some soft skills, high team working spirit, organizational skills, multitasking, and time management. As a student, I highly recommend you to pick up a HiWi job as this helps you gain technical and practical expertise and research skills in your area of study and interest. It also exposes you to the work life in Germany, which is pretty good for your international career or future work in Germany. Here are some key recommendations I can give you on how to get a HiWi:

- 1) Always check the student work website: <https://www.stellenwerk-stuttgart.de>
- 2) Meet other senior students and engage with them. Networking will help you quickly get what you want.
- 3) Reach out to your lecturers and talk to them. If you find an ongoing research project which interests you, talk to them and express your intent in assisting them. This will give you the opportunity to explore the field.

Lastly, I recommend you create as many connections as you can, for these networks will always be of great help to you.

Ananya Ramaswamy & Bechem Napson
M.Sc. WASTE Students, Gen. 2018 & 2019

HiWi JOBS DURING M.Sc. WASTE

Firing systems-related HiWi: Experience from Mohammad El-Wajeh

My HiWi job was working as an assistant in the Department of Firing Systems (KWF) of the Institute of Combustion and Power Plant Technology. In the department I work as a student assistant on various projects and research works going on in the department. My expectations of working as a HiWi was to develop technical expertise and research skills in my academic and future professional career and to also get acquainted with the working environment here in Germany, particularly in the academic milieu. Working as a student assistant, you do not only earn money but gain expertise, which will help you in your future research and professional career as compared to other student jobs you might find outside the university campus. On this note, I recommend you as a student to search and try to get a HiWi job while studying at the university.

How can you quickly get a HiWi job as a student?

- If possible, direct contact with the job sticker (person in charge): After sending in your application, move to the professor or employer and express your interest working with him or assisting in the advertised job opportunity.
- Connect with someone working already as a HiWi, who can notify you if someone working as HiWi wants to leave, where he or she can recommend you to replace.

As a student, HiWi jobs are also very flexible and less time consuming. This allows you to have more time for your studies, compared to jobs outside campus. My experience as a HiWi has not only given me the opportunity of gaining technical and research skills but has helped me hone skills in team work, time management, communication and writing. It is such an amazing opportunity to work as a HiWi and I thank the department of IFK for granting such an opportunity to work with them.

Mohammad El-Wajeh & Bechem Napson
M.Sc. WASTE Students, Gen. 2018 & 2019

M.Sc. WASTE GRADUATION CEREMONY 2019



M.Sc. WASTE Graduates Gen. 2019 - Picture by Jeramiah Backman

On Saturday, November 16th, 2019, the program of Air Quality Control, Solid Waste and Waste Water Process Engineering (WASTE) held the Graduation Ceremony for Generation 2017. We celebrated the hard work that our students put into these past two years. This brought genuine emotions for students and their families; it was a way for the master program to honor students personally after finishing their journey.

A journey that started two years ago when the newly accepted students moved to Germany full of dreams, expectations, excitement, and willingness to learn. During this time many things happened such as new friendships, goals, and experiences. The student time at WASTE was stressful but at the same time offered many opportunities for fun, something

they may have not experienced in their bachelor studies. The experience at M.Sc. WASTE is unique with people of different ages, backgrounds, and professions, coming together and sharing their cultures and experiences. They also had the chance to be involved in what they were really interested in.

Many of them joined clubs, workshops, research training, and development opportunities as well as other social activities.

The Graduation Ceremony began with a welcome speech by the Dean of Studies Prof. Andreas Kronenburg and the course director Carolina Acuña, who congratulated the students on their achievements.

Continues >>

M.Sc. WASTE GRADUATION CEREMONY 2019

The Class speakers from Generation 2017, Mr. Anas Maali and Ms. Katharina Wolf, also gave their farewell speeches and thanked their fellow students, the faculty, and the administration for the memorable time at the University of Stuttgart. In the intermezzo, the participants were delighted with the performance of Daruska Miric, Daniel Obando & Company, who specially played for this occasion. Finally, the certificates were handed out to all the graduates.

After the official ceremony finished, the guests were invited to participate in a toast for the new graduates and an international buffet, prepared by the students from Generation 2019. Additionally, to the delight of the assembled crowd and for the first time in the M.Sc. WASTE graduation ceremony,

Funny Awards took place. These definitely added some humor and lighted the night, the awards were given to the students for the king and queen, amazing artist, best beard, best musician, best dancer, etc.

Finally, it was time for some entertainment. Students from all generations took to the stage with energy and were willing to show off their dancing skills. The perfect end to an inspiring day! We wish all M.Sc. WASTE graduates the best of luck with their future endeavors and look forward to hearing about their accomplishments.

Nery Condori
M.Sc. WASTE Student, Gen. 2019

M.Sc. WASTE SUMMER PARTY 2019

Just one week after the end of lectures of the last summer semester, M.Sc. WASTE was ready to celebrate its traditional summer party. The work and preparation for this great party had begun weeks before, with motivated students from Generation 2018 helping with the organization, led by the M.Sc. WASTE Office and our Course Manager Nelson Rincón. While one team designed and prepared the lovely decorations spread around the party, this year with strong summer vibes that included lots of colour and bright pink flamingos, the others were planning a delicious food and drink menu so that every guest could enjoy this afternoon to the fullest. From food grilled to perfection by our experienced Grill Masters to great cocktails prepared by our Mixologists, the Summer Party was perfect!

But the fun did not end there. A Shisha corner, beer pong table, volleyball court, and even a skill game prepared by our very own Christina Zeuner, carpenter extraordinaire, made this evening one to remember. And, as always, great music was provided by Gen. 2018's DJs Aldo Merino and Diego Eufrazio. As part of the organization of this event, it made me incredibly proud to see that all the work everyone invested into putting together this event was worth it. Not even the sudden rain later in day stopped the party, with people talking and laughing till late into the night. I am already looking forward to next year's Summer Party, which I am sure will be even better than the last!

Javier Carrillo
M.Sc. WASTE Student, Gen. 2018



M.Sc. WASTE WELCOMING EVENTS 2019

Trip Excursion to Solitude Castle

On the 18.11.2019 the M.Sc. WASTE program organized our first group meeting for Generation 2019. It started with a welcoming event where we were given an introduction about our new home Stuttgart, the University, and the course itself. This was a great experience to start familiarizing ourselves with everything related to our new experience and to know the program coordinators, professors and students from previous generations better. After our informative morning we embark on an excursion to Solitude Castle, located inside the forest beside Vaihingen University campus. Our excursion started in the M.Sc. WASTE building, where we were led by the organizer of this event, Nelson Rincón, who had also brought along a cameraman to snap the best moments of the event.

The sun was shining and there were just a few clouds in the sky. With this scenario we started our walk. The extraordinary weather was perfect to start to meet our new classmates of Generation 2019, so groups were formed, and new friendships followed. We stopped a couple of times to get some air and some pictures of this place as for some of us it was the first time inside this beautiful area. This 6-Km walk passes through different, amazing and colorful landscapes of the Baden-Württemberg state. The trees gave us a comfortable shade all the way important to be able to complete this long walk.

During this walk, I got to know a lot of students of this and past generations. I found this incredibly helpful, as I got to learn the background of my new classmates as well an insightful knowledge of the course experience. This experience made the M.Sc. WASTE program already surprise me, in a nice way, for the diversity of the groups, their student's sto-

ries and how well organized this course was. I was able to meet people from all over the world and their inspiring tales about how they decided to change their lifestyles and come to Germany. This was a gratifying experience as it showed me that there were likeminded individuals looking for a change in the world.

We arrived at the Solitude Castle after one hour, had a quick wonder and settled ourselves in the garden to have our first Generation Lunch. We all brought different foods to share, making this a great moment, as we got to taste some international dishes. After eating, some gathered around and got more time to know each other while others participated in group sports such as frisbee and American football. The M.Sc. WASTE Program had a surprise for us and told us they had organized a visit inside the Castle itself. For some of us it was the first time to see a castles façade, so having the opportunity to experience it at first hand was incredible. The tour was led by a German guide, however someone from past generations was kind enough to translate some parts of his speech to the newcomers. In the Castle we visited different rooms and learned the meaning they had to the then King. The Castle is still in great condition, and I would highly recommend it to new generations as a spot to visit. Following this part of the event the agenda was concluded and we head back to campus.

This event was a great experience to get to know the M.Sc. WASTE program and everything around it, from new and past students to this great spot in Stuttgart to finally the coming study challenge ahead.

Juan Camilo Lancheros
M.Sc. WASTE Student, Gen. 2019



M.Sc. WASTE Welcoming Hike 2019 - Picture by Jeremiah Backman

M.Sc. WASTE WELCOMING EVENTS 2019

Official Welcoming Event - Election of Class Speakers 2019



M.Sc. WASTE Class Speakers 2019 - Picture by Jeremiah Backman

Every year the M.Sc. WASTE program puts on two welcoming events to introduce the incoming students to their program and their surroundings. For the 2019 generation, the class speaker Chidiebere O. Okekeozor shares his experience below:

For the first welcoming event, the idea of walking to a German castle was not quite a new idea to me, since I had a prior experience that was similar in September 2019. Even still, the Solitude Castle Walk brings beautiful and still fresh memories. Nevertheless, my story focuses on the second welcoming event organized by the M.Sc. WASTE Office on the 18th of October 2019. The class had been informed that the election for Class Speaker would be held during this event. I wanted to apply for this position, not because of the position itself, but because of my passion for service. I also had previous experience managing social media for our M.Sc. WASTE Generation 2019 since we were granted admission to the program. There were other candidates during the election, which I found quite challenging, but at the end my colleague Camilo Lancheros and I were elected as Class Speakers. After the election, there was time for socializing with each other. Something that caught my attention was the simplicity in the interactions between students and staff, regardless of social status. Equality was truly exercised.

Another thing worthy of mention was the amazing cuisine. We could try things from German apple strudel to Nepalese momos, from Italian tortelinis to the classic chocolate cake. I had a bite from each and found everything amazing. I also had the hope of finding some African food, but this was unfortunately not the case. Nevertheless, later we had the opportunity to share African cuisine – plantain with spiced fish – with the rest of the program and we received some satisfactory compliments.

The shown appreciation from students for our meals, the service done, and uniqueness in personality filled me with joy. My election as Class Speaker during this event will remain a remarkable memory to me.

Chidiebere O. Okekeozor & Zuemmy Carolina
M.Sc. WASTE Students, Gen. 2018 & 2019

STUBE - SEMINAR (Ausbeutung und Verschmutzung der Meere)

I first decided to join STUBE out of curiosity, after a workshop I joined at the International Center. What most impressed me was the people I met there; students who had beautiful projects or strong desires to go back to their homes and make great environmental and social impacts. Some were even already trying to build partnership between governments or just doing somethings by themselves. It inspired me because

deep down I know that it is my long-term goal. The seminars offered by STUBE are usually a weekend long where students from all over Baden-Württemberg get together in a city for a full immersion in a specific topic, paying a student friendly fee with hotel, transportation, and meals included.

Continues >>

STUBE - SEMINAR (Ausbeutung und Verschmutzung der Meere)

Besides the seminars, there is also a special scholarship for internships and the "Multiplikator*innenprogramm", which is a yearlong program where one can learn methods and training to lead such seminars. Taking into account that the whole program is in German, this is a great opportunity to step up our German level. Agonza and I decided to take part of this program and will be sharing more details after we are done, maybe in the next issue of the Newsletter!

In any case, all the information you may need can be found on their website. The whole team is super friendly and welcoming, so do not be afraid to ask questions and join!

<https://www.stubebw.de/>

Igor Ramos
M.Sc. WASTE Student, Gen. 2018



STUBE, Seminar - Picture by Igor Ramos

„Last weekend STUBE organized a seminar, Ausbeutung und Verschmutzung der Meere (Exploitation and Pollution in the Sea). I registered to the seminar as the topic is something I care about and I wanted to do something productive during the weekend. Even though the whole seminar was in German and there were parts I found hard to follow, I really learned a lot about sea politics and pollution. The fact that everyone who was participating in the seminar only spoke German to each other really encouraged me to step out of my comfort zone. I think that STUBE is a great platform to learn new thing and ideas and a place you can improve your German. They create a comfortable and engaging environment for students and I felt very welcomed“.

- **Rinusha Maharjan, Gen. 2018**

Taking part in the conference STUBE organized was a great experience for me. I had not expected it to be informative and so much fun. The topic itself, pollution of water, was the reason I was attracted to the idea in the first place. This topic was new to me, as I have never appreciated nor acknowledged the depth of our oceans and seas both literally and figuratively, and I never realized the richness that lies within it. I learned about some detrimental water politics at play among different countries and some of the history that comes with it. Besides the load of information that I was able to collect from this experience, my favorite part was being able to discuss such topics with the participants themselves. They came from different continents, bringing with them very new perspectives to my personal views. I truly found STUBE to be a great tool in bringing people together from all around the world. It was able to teach us important information about current topics and also allowed us to discuss this in a comfortable environment. It is inspiring to know that with this knowledge, we can each return to our respective countries and contribute to making the world a better place for everyone.

- **Salua Moussawel, Gen. 2018**

STUBE has given me an opportunity to learn, exchange ideas, and acquire skills and methods in addressing important topics with a global view. The STUBE seminars provide insight of how one person can make a difference in improving the quality of life. I recommend that other students participate.

- **Agonza Lwakatare, Gen. 2018**

RECYCLING AT THE DORMS

Imagine you are an international student traveling to Germany for your studies. In your country, you may have heard about the efficient German recycling system and you feel excited about getting to know it firsthand. Surprisingly, when you arrive to your dorm you notice that there is no waste separation system being correctly followed.

At a first glance, it seems difficult to get a group of international students to follow the recycling system when they have diverse backgrounds and different familiarities with separation system from their home countries, and perhaps even no system at all. The potential for misplaced and mishandled waste was determined to be high enough that it is the actual reason why the system disappeared from the dorms some years ago. Several students of different generations have asked themselves why this is happening and there has been previous attempts to reestablish the German separation system in the university dorms, all of which have failed. At the moment, the students of M.Sc. WASTE, in collaboration with the Studierendewerk Stuttgart, are carrying out yet another initiative in hopes that the new project will succeed.

During the III M.Sc. WASTE International Symposium the leaders of this project explained more about the project. The leaders are convinced of the benefits that will come with the reimplementation of the separation system, such as:

- International students will gain knowledge on waste separation independently from their field of study and hopefully will implement it in their home countries.
- With the improvement of waste disposal in the dorms, valuable materials may be recovered instead of going together with residual waste. As a consequence, a reduction of our ecological footprint will be realized.
- It will contribute to the reduction of residual waste emission.

The motivations to persist with this project are diverse. The desire to watch young relatives grow up and thrive in a healthy

environment, the need to ensure the existence of clean oceans in the future, the passion for environmental activism, and the recognition of the economic importance of waste separation are just a few.

Right now, the project is in its data collection phase. Weight measurements are carried out weekly in every kitchen of the Allmandring I dormitories and the impurities in each bin are being monitored. Even in this early stage of the project more students are getting interested in separating waste correctly. According to the leaders of the project, proper separation has become a frequent topic for the residence while they are cooking dinner.

The next step for the project will be to present this information to Studierendewerk and possibly discuss bringing back the German yellow bag system to the dorms for the separation of packaging waste.

When asked, the project members provided some advice for people trying to start similar initiatives. They talked of the importance of talking as much as possible about waste. It may sound ridiculous at first, but with time you will hopefully notice that the person you talked to was influenced by these comments. If people do not understand the value of separating waste, they will not be motivated to follow the procedures. A second and incredibly important point mentioned was to always speak up when you come up with an idea. Often someone is also thinking of the same thing and nothing will happen if the ideas are not shared. Finally, the leaders of the project would like to remind everyone reading this article that what we pollute today means less resources for tomorrow. Our actions today matter, but people can only know that if they first understand the impacts of those actions.

Would you like to learn more about waste separation in Germany? Please visit (only in German):

<https://www.stuttgart.de/abfall>

Zuemmy Carolina
M.Sc. WASTE Student, Gen. 2019



CALYPSO - WASTE MANAGEMENT PROJECT



calypso



Have you ever been to another city and found yourself standing in front of different trash bins without being sure which one is the right one to use? If you can relate to this problem, we want you to know that you are not alone. Some years ago, Carolina Trichet, the founder of Calypso Startup, was facing this same problem of not knowing where to put the trash wherever she traveled. As a first step, logic told her to research on the Internet where she certainly found a lot of information, but it was rarely useful.

At the same time she noticed that there were a lot of doubts and the waste concept was not fully understood. She made the connection that, as a society, we do not necessarily realize the full monetary value of the items we call waste. Consequently, we are not making further use of them and therefore missing out on economic opportunities.

With the previous ideas in mind, Ms. Trichet asked herself how could she easily show people the waste categories (not only known paper, plastics, and glass, but also electronics, clothes, etc.), the importance of correct disposal, and the impact that little changes in daily habits may be reflected as an additional income, thanks to waste separation

After a lot of thinking and putting all the pieces together, Calypso was born. The high-tech startup works as a link between the municipalities, waste producers, and waste collectors to provide real-time data to improve transparency and traceability of waste. This valuable information may be used by municipalities to know the quantity and quality of waste being produced and also we, as waste producers, might be able to identify when and where our separated trash is going to be recollected, i.e. in German cities. The information made available by Calypso could enable more efficient waste management systems in the future.

As the sole founder of Calypso, Ms. Trichet faced all types of obstacles at the beginning. From municipality approachability and continuous funding to problem acknowledgement and customer attraction, everything had to be considered to make Calypso successful. Now that these problems have been overcome, she and the rest of the team are focusing on working with municipalities to digitalize their waste management systems. After increasing interest and several requests from committed citizens worldwide, they decided to also start working on a demo app that will be available on their website in the future to test interaction and prove that people are interested in being part of the solution.

Zuemy Carolina
M.Sc. WASTE Student, Gen. 2019

M.Sc. WASTE - ART!



by Momo
M.Sc. WASTE Student, Gen. 2019

STUTT GART CULTURAL ACTIVITIES

1. Internationales Trickfilm-Festival Stuttgart

World-wide outstanding event for animated fil.

5 May - 10 May 2020

Location: Different theaters and parks in Stuttgart

Picture and info: <https://www.itfs.de/>



2. Stuttgarter Frühlingsfest

Traditional carousels and the latest funfair rides and attractions on Europe's biggest and most attractive spring festival.

18 April – 10 May 2020

Location: Cannstatter Wasen Stuttgart

Picture and info: <https://www.stuttgarter-fruehlingsfest.de/de/home/>



3. Jazz Open Stuttgart

For this event Stuttgart will be the hotspot of the jazz scene with stars of the international jazz, blues, soul and pop scene.

09 – 19 July 2020

Location: Different stages in Stuttgart

Picture and info: <https://www.jazzopen.com/>



4. 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.

06 – 09 August 2020

Location: Schlossplatz Stuttgart (Palace Square),

Picture and info: <https://www.stuttgart-tourist.de/en/e-stuttgart-summer-festival-2020>

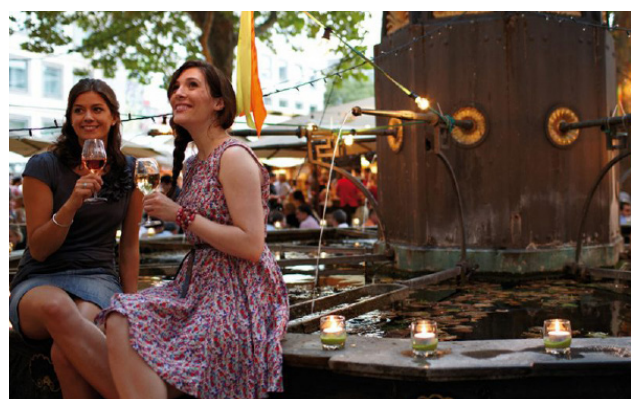


5. Stuttgarter Weindorf

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.

26 August - 06 September 2020

Picture and info: <https://www.carnifest.com/stuttgart-wine-festival-stuttgarter-weindorf-2020/>





NEWSLETTER

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M.Sc. WASTE Generation 2019 - Jeramiah D. Photography

Newsletter of the International Master Study Program WASTE and the WASTE Club Stuttgart e.V.

International M.Sc. program „Air Quality Control, Solid Waste and Waste Water Process Engineering“ (WASTE)

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