

WATENV Newsletter

No. 8
August 2018



NEW FACES IN WATENV

Welcome to Leibniz University Hannover!

In October 2017, we welcomed a new batch of 25 WATENV students from thirteen countries. We are happy to have them in our big colourful family.

Recently we also welcomed the newest arrivals- the DAAD scholars of the batch of 2018, who arrived in August and started their journey in Hannover with an intensive German language course.



The new WATENV batch of 2017 in front of the university's main building



Our new junior WATENV students and scholarship holders of the German Academic Exchange Service (DAAD) in the university park

Student Team

(by Golbarg Goshtabpour)

Every year, a WATENV volunteer group is formed with the aim of supporting new students who face difficulties when they arrive in a foreign country for the first time for higher studies. As a group of senior WATENV students, already accustomed to the university system for quite some time, we try to assist new students faced with problems of finding accommodation and settling in a new environment.

Apart from help with new arrivals we also organize events such as a barbeque party during the summer semester, Christmas party during the winter semester, hiking tours, picnic and many more exciting events.



The WATENV Volunteer Student Team 2018 (right) and the senior student team 2017 (left)

Student Assistants

Two new student assistants, Nelli and Pauline, have joined the WATENV team this year. They are offering social and cultural activities for our international students, and will also assist in welcoming our new students during the two orientation weeks as well as the upcoming first semester, filled with fun and helpful workshops, excursions, and much more.



Nelli and Pauline (left to right)

New Junior Professor and WATENV lecturer

Dr. Christian Förster started as a junior professor of urban hydrology at the Institute for Hydrology and Water Resources Management. For his PhD in regional climate and hydrological modelling, he put an emphasis on snow modelling, and later moved to postdoctoral positions at two different research institutes in Austria. About his time and plans in WATENV, he states: "Even though the focus of research changed for me, the new position as a professor is an important chance for me to proceed with research in hydrology. Moreover, it allows me to proceed with teaching which I really see as an asset since I believe that research and teaching should go hand in hand. I teach "Meteorology and Climatology" which is part of Natural Sciences (1st semester). This lecture provides basic knowledge about processes in the atmosphere and their relevance for the water cycle. I am also developing a completely new module "Urban Hydrology" which also reflects the paradigm shift in that field. This is especially relevant since the past decades have seen a transition from "storm water drainage" only to understand water as a

resource in cities. Even though I had to revisit a lot of concepts from my previous job in the consulting company, I see this new development as a welcome challenge to learn new things in a way that I can teach them to others. In urban hydrology, I really like to combine the fundamentals in hydrology with the requirements placed by engineering practice.

In order to fill this perceived gap, the course includes lectures and tutorials in equal shares with special emphasis on applications with computer models.”

Besides teaching, he also wants to focus on new research ideas which are addressed in research proposals in close cooperation with international scientists of different disciplines. His ideas cover studies on changes in pluvial flood risk on multi-decadal scales, improvement of (urban) hydrological forecasts at time scales beyond typical weather forecasts, and the experimentation with new measurement technologies to improve modelling by additional data.

“The topic of water as a whole and the challenges associated to water in the light of global change are manifold and complex. However, I believe that the fast progress in scientific advances on the one hand and the impediments to implement them in the light of the complex interaction with other systems on the other hand are often challenging but also offer a lot of opportunities – also for WATENV graduates.”



Junior Professor Dr. Christian Förster

Excursion to Spiekeroog

(by Luisa-Bianca Thiele)

In April, sixteen students from the Wetlands class boarded the ferry from Neuhalingsiel to Spiekeroog to explore the Spiekeroog island in the Wadden Sea for three days. As neither cars nor public transportation are allowed on the islands, we were able to see a lot of attractions while making our way from the harbour to the youth hostel which is located on the east side of the Spiekeroog island. During the excursion, we had a guided tour of the beach and the sand dunes in order to get to explore a cross-section of Spieker-oog.



Students at the tour to beaches and dunes

We visited the National Park House and a photo presentation from Edgar Schonart, a local photographer who showed amazing photos of the birds. After this presentation, we also had the opportunity to go bird watching on the island ourselves. On our last day, we had a guided tour of the tidal flats. As it was a really windy day in April, we took our rubber boots instead of going barefoot into the mudflats.



Waiting for the walk into the tidal flats

To warm ourselves up after this tour, we visited the small village of Spiekeroog where we tasted traditional East Frisian delicacies like the famous black tea.

Internship in Lebanon

(by Hisham Itani)

After one year of intense studying and attending classes at the university, I had the opportunity of doing an internship in my country during the summer break. The internship was done at Khatib & Alami Consolidated Engineering Company which also happens to be one of the leading engineering firms in Lebanon and the Middle East. It focused on the methodologies of the design of urban drainage systems. Several activities associated with this topic were carried out; activities such as a statistical analysis of hydrological data and testing of goodness of fit, developing IDF curves from raw data, design of drainage networks, detention ponds, channels, and highway culverts respectively as well as acquiring a basic knowledge about floodplain mapping.



Hisham Itani in the office

I found it extremely valuable to get to know how the theories which were covered in class are applied to real-life engineering problems. I consider the internship to be an important step towards expanding my knowledge in hydrology and building my experience upon. The internship was not only beneficial in terms of acquiring technical expertise as it allowed me to spend some valuable time with my family and friends as well. I would like to thank DAAD and WATENV for giving me the opportunity to do the internship back home, and I definitely recommend future students to do the same.



Impression of the skyline

International Day at Leibniz University Hannover

In June, the 3rd International Day was organized by the International Office with the help of many volunteers. The WATENV study course had its own information booth present. Many WATENV students participated with their own country presentations which included dance shows and music performances. Visitors were able to traverse the world in the Lichthof as well as taste delicious traditional food and drinks of many different countries.

Mohamad Aziz Zarif, Golbarg Goshtasbpour and Phuong Nguyen at the WATENV booth



WMO representative visits the WATENV office

In March 2018, Ms. Hong Fan, Fellowship Officer at WMO (World Meteorological Organization), visited the WATENV team. Founded in Geneva in 1950, the WMO focuses on international cooperation and coordination, on the state and behaviour of the Earth's atmosphere, its interaction with the land and oceans, the weather and climate it produces, as well as the resulting distribution of water resources. Each year, WMO sponsors one or two scholars from developing countries, to join the WATENV Master program.

Besides talks and meetings with the WATENV staff and lecturers, as well as the university's International office, Ms Fang met our current student, Nibesh Shrestha, for lunch. Originally from Nepal, Mr. Shrestha got selected for the WMO fellowship program and shared his so far experience with the WATENV program and life in Germany in general.

Eventually, we parted with Ms. Fan on great terms with the promise to not only continue but deepen the collaboration with the WMO through a new Memorandum of Understanding.

We hope to welcome Ms. Fan at WATENV again in the near future!

For more information on the WMO and its fellowship and training program, please visit the WMO website:

<http://www.wmo.int/>



Nibesh Shrestha and Ms. Hong Fan

ALUMNI NEWS

A PhD Story

Anne Fangmann, a German national of the second WATENV batch which started in 2010, had studied Environmental and Research Management in Cottbus for her bachelor degree. That led her to choose WATENV for her master degree, since water sciences fascinated her the most among the broad variety of topics she learnt during her B.Sc. After two years of WATENV, she presented her Master thesis under the supervision of Prof. Haberlandt on "Time series analysis of drought and low flow indicators in Lower Saxony". Upon acquiring her master's degree, she started right away with her PhD at the institute for Hydrology and WRM.

About her current work she says: "I kept working with low flows and droughts, especially with the development of statistical models that allow the prediction of low flow indices in time and space along with working on other projects and teaching. My PhD thesis is 'Low flow prediction in time and space: An adaptive statistical scheme for regional climate change impact assessment' which I finished working on last year. For me, doing research is one of the most satisfying jobs imaginable. You can be creative, come up with new methods and be excited – or sometimes disappointed – about the outcome.

Sometimes it gets stressful, sometimes frustrating but it definitely never gets boring." When asked about what she would suggest to the current WATENV students, Anne replied:

"For those of you who are interested in doing a PhD, I think that studying WATENV provides you with all the necessary basics you need to start a PhD in various fields. Apart from the education, it is very helpful for you to be creative (how to solve all those problems?), to be able to work independently, to effortlessly learn and implement new techniques for your own purpose (do learn programming), to be able to work under pressure, and to be patient (it doesn't all work out directly from the beginning but it will eventually). All in all, the time during the PhD was really exciting and I learned so much more than I could ever imagine."



Anne Fangmann in her office

The WATENV COUPLE

Two young water specialists who studied and graduated from WATENV and got to know each other in Hannover while studying for a master degree are now engaged and based in Bogota, Colombia. Diana Cordoba and Vishwas Vidyaranya started their WATENV journey in 2014. Diana is from Cartagena, a beautiful city in the Caribbean coast of Colombia and Vishwas is from India. Diana is an environmental engineer who worked in Colombia doing research in water wastewater treatment as well as coordinating the development of environmental impact assessment for agriculture, hydrocarbon and infrasectors in the country and to work in coordination with the health and environmental authorities. It has also been a challenge managing the difficulties related to the public sector in a developing country.

“Being part of WATENV definitely opened new opportunities for me and gave me skills to manage professional challenges. The courses and technical knowledge have been very useful for my career; additionally, the cultural exchange and networking helped me grow as a person and gave the master degree an incredible added value.”



Diana Cordoba (left) and Vishwas Vidyaranya at work

Diana's message to the current WATENV students is: “Enjoy the time you spend in Germany and take every opportunity you get to learn and grow. Every experience will be valuable. ”

Vishwas worked in the field of waste management in India for about 5 years before WATENV. He did two internships while staying in Germany and worked on Mechanical Biological Treatment projects. His master thesis was a continuation of his work as a student as-

sistant and intern, which was designing and evaluating a treatment plant of 150 tpd capacity for a township near Bangalore, India. Subsequently, he started working for an Indo-German start up in waste management. When asked about WATENV, he states: “WATENV was a well-structured program and the courses of sanitary engineering were very practical. I'm able to apply the knowledge that I gained in my daily job”. He is currently working as a technical at Value Investment Colombia SAS, which is a leading sustainable infrastructure company in Colombia. Vishwas explains: “I'm in charge of executing projects on potable water, wastewater and waste treatment, aquifer recharge and sustainable urban infrastructure. I work with a multi-disciplinary team of engineers and architects and we innovate every day. This is very exciting as I learn a lot here. I am also able to improve my Spanish and travel around this beautiful country as part of my job. Besides the courses of the WATENV program, the best part of studying in Hannover for me were the jobs as student assistant. I also attended several conferences in Europe and was part of many technical organizations such as ISWA, DWA, VDI, etc. These events helped me build a strong network across the world in my field and has helped me get internships, scholarships for some international conferences. This would be my advice to future WATENVs as well. Networking in our field is extremely important and being a student in Germany gives access to a lot of such opportunities. The whole experience in Germany was amazing. I travelled to over 15 countries with a lot of backpacking and it was nice to experience different cultures. I also met my life partner, Diana Cordoba, in WATENV; so, LUH and WATENV are very special to me. Diana and I are engaged and we live in Bogota. Hannover will also be my second home!!”



Diana and Vishwas

A WATENV Story in Italy

(by *Andrés Valerio*)

Two years of attending lectures, studying for long hours, writing essays and examinations – lot of hard work and often even more stress! But also, two years of getting to know a new country, its culture, language, food and people; meeting classmates from literally all corners of the world, learning about their backgrounds and eventually developing friendships with people that I never imagined that I could have met. Was it worth it? It was not only worth it, but I can describe my two years of studies in the WATENV master degree program as one of the best seasons of my life.

Sometimes things don't go as planned after your studies, but that could actually be a good thing!

In my case, three months into writing my Master thesis, I was offered the opportunity to apply for a Carlo-Schmidt scholarship program which in turn allowed me to apply for a 6-month long internship at organisations such as the UN, WHO, FAO and others. Later during the semester, I found out that I had been selected to carry out an internship at the United Nations World Water Assessment Program (WWAP) in Perugia, Italy. Hosted and led by UNESCO, the WWAP coordinates the work of 31 UN-Water members and partners in the World Water Development Report (WWDR). The opportunity seemed attractive, therefore, while still writing my thesis, I had to start arranging all the details to move to Italy. Although complicated at times, the excitement of having the chance to live in a new country and collaborate in an organization like UNESCO was sufficient motivation to keep striving. The challenge seemed big at WWAP, but the knowledge I was able to acquire during my WATENV studies and previous background have proved adequate to engage with the fast-paced rhythm, technical and practical skills required as well as the challenges an international organization like UNESCO has to offer.

From basic courses like Research and Colloquium which teaches how to correctly draft and present scientific articles and research papers, to more technical courses like Integrated Water Resources Management and Sanitary Engineering which teach the theoretical and practical know-how of how to manage water re-

sources in a sustainable way, they all form a “professional toolkit” that allows WATENV students to tackle water issues in various contexts and multidisciplinary work teams. Once you start working after the master degree program, it is very encouraging to see that all the studies and hard work were worth it and can be applied at a practical and working level, as well as to understand that the learning process never ends and we have to keep learning new things constantly. My internship at UNESCO has shown me that everything you are able to learn is going to be of use someday in your workplace and it can never be too much.



Andres Valerio in Italy

Now, I would like to find ways to develop cooperation projects between Germany and Costa Rica or Latin America in general, either in the frame of the private sector or ideally within the context of governmental and international organization or NGOs. There is so much to do in our countries in Latin America within the water resources and sanitation sector. The challenge is massive but exciting at the same time. Finding bridges and collaborations between Germany (which has become a second homeland for me) and Costa Rica is something I will strive to achieve in the coming years.

The blessing of having the opportunity to study for a master degree in Germany is more than just a huge gift. It is a great responsibility. We the graduated students have been equipped with the knowledge that enables us to make a difference in our world, to be agents of positive change, to help improve the well-being of so many others and protect the environment; let's be the change the world needs!

List of the latest master theses (2017)

- Development of a Measurement Technique for the Fractionation of COD by the Use of TOC, **Muhammad Zaki Fadillah**
- Exergy Based Environmental Analysis for the Evaluation of Biomass Energy Conversion Systems: A Case Study on Biogas Production and Utilization Process, **Oscar Giovanni Gil Díaz**
- Kinetic Parameters of Sulfide Oxidation by Nitrate/Nitrite as Autotrophic Denitrification, **Rajita Gautam**
- Developing a Nearest Neighbor Method for Forecasting Sewer Pipe Velocities from Rainfall Characteristics during Pluvial Floods, **Shanshan Hu**
- The Future Development of Rigarian Buffers in the Chilean Itata Catchment: An Agent Based Model Experiment, **Bruno Morales**
- Dissolved Methane Recovery from Anaerobic Systems Treating Industrial and Domestic Wastewater, **Kenjiro P. Siburian**
- Improving the Flood Forecasting for Benefiting the Operation of a Reservoir in Brazil, **Joao Victor Silva Lopes**
- Comparison of Rainfall Disaggregation Models and Validation with an Urban Hydrological Model, **Bimal Adhikari**
- Development of a Simulation Model for Hydrolysis of Sewage Sludge and Co-Substrate, **Layali Ali**
- Granular Activated Sludge for the Treatment of Wastewater, **Shima Behzadpour**
- Evaluation of the Required Input and the Integrated Measures in Storm water Modelling Tools, **Xuan Uoc Ho**
- Development of a Compact Biogas Plant for Fisheries including a Decision Tool for Application, **Eleni Myranta Ioannaki**
- Model-Based Comparison of Different Nitrogen Removal Strategies for Wastewater Treatment Plants in Countries with High Temperatures. Criteria: Energy Demand and CO2 Footprint, **Aya Ashraf Ismail**
- Cyclic Degradation of Axial Pile Capacity, **Zain Javed**
- Study and Estimation of Excess Sludge Production Depending on the Phosphorus Elimination and Recovery Method Using Plant-Wide Dynamic Modelling of Municipal Wastewater Treatment Plant Hildesheim, **Suresh Kumar**
- Design of Dam Spillways with a Special Focus on the Hydrograph's Shape, **Kshitij Shrestha**
- Comparison of Regional Flood Frequency Techniques, **Anuj Sigdel**
- Coastal Profile Redistributions Due to Storm Impact on Sylt Germany: The Effects of Climate Change, **Sarah Soha**
- Investigating Unsaturated Zone Water Transport Process by means of Bio-Geochemical Analysis of Soil Depth Profiles: A Comparative Study of Two Semi-Arid Sites, **Daniel Okubay Tewolde**
- Design and Comparison of Different Technologies for WWTP's in Tropic Regions with an Example of WWTP Los Tajos in San José (Costa Rica), **Andrés Valerio**
- Defining the Maximum Total Coastal Reclamation Area in Indonesia- The Case of Jakarta Bay, **Aditya Wishnu Wijaya**

Graduates of 2017

(by Bruno Morales)

Every stage has an end. However, along with this stage are the many experiences, attainments, and memorable moments lived by every one of us which will be a part of our identity as individuals. In October 2015, a group of international students from over ten different countries started the master degree program in Water Resources and Environmental Management in the city of Hannover. At the time, doubts and fear were part of the feelings of these students who were in a foreign country with a different culture and different language, even while the expectations and happiness of living a new experience governed their spirits. After two years of this wonderful stage, they celebrated the end of this unique phase in a Spanish restaurant in order to say together: "we did it", "we made it". There is nothing more appropriate than to thank all those who were behind the success of this program. It goes to show that every goal to be achieved can truly be achieved.

Contact:

Water Resources and Environmental Management (WATENV)
Leibniz University Hannover
Institute for Hydrology and Water Resources Management
Appelstraße 9a
30167 Hannover
Germany

WATENV newsletter
published and edited by: E. Starke, G. Goshtabpour

Website: <https://watenv.de>
Mail to: watenv@iwu.uni-hannover.de