

October 2019 | Volume 4

Newsletter

iGEM Team Vienna 2019

We are happy to find you reading our fourth newsletter! Get updates on the progress of our 2019 iGEM project „A novel approach to **Buruli Ulcer diagnostics**“ and further plans.

Editorial

Autumn is here, the first lectures have already started again and many have already found their way back to normal university life. But not for us.

We still have two weeks of project work ahead of us: The last laboratory work has to be completed, the last data and information need to be brought into shape and uploaded to our Wikipage. And then, there is the big lab cleaning day – still plenty to do! But so much has been done already: Learn in this newsletter how our first pub quiz went, how we experienced the European Researchers' Night, and how the presentation at the Francisco Josephinum Wieselburg and the meeting with the iGEM Alumni Europe representative Nemanja Stijepović went. Furthermore, we will inform you about the latest laboratory progress.

ERN 2019

At this year's **European Researchers' Night (ERN)**, we organized our own booth to showcase our project and create space for questions and discussions with a diverse audience. Over the evening, we counted well over 200 visitors who we could introduce to our project work. From young to young at heart, our live tomato DNA extraction and the hands-on trial of our diagnostic test kit sparked some extra joy and interest for our visitors, and we hope that we have inspired many to delve deeper into life sciences and synbio. A big thank you goes to **Dr. Munir Merdan** for hosting our booth at the ERN and for providing us such a great stage to promote science, our project and our generous sponsors!

Lab progress

What happened in September?

In the first third, the remaining constructs from the previous month were completed in order to start fluorescence measurements. At the same time, the calibration of the instruments was started to comply with iGEM standards. The measurements were started with different aptamer variants. This gave us some insights into how high the fluorescence values are and how they change when a ligand is added. Initially, theophylline was added as a ligand, and the results have been consistently satisfactory.

For our project we needed the toxin mycolactone, which was provided to us by **Dr. Kingsley Asiedu**. Together with our professors, we tested this toxin as a ligand, while considering handling it with all due caution. However, the measurement series were extremely time-consuming, and therefore, the results could not yet be evaluated. Towards the end of the month, we also started to deal with a cell-free system. After a conscientious planning phase and some consultations with **Dominik Jeschek**, an expert in the field, we were allowed to start with the first experiments at the end of September and are eagerly awaiting the remaining results!

Pub Quiz

Seven teams participated in the first edition of the iGEM Vienna 2019 Science Pub Quiz and had a lot of fun competing for the main prize: a hand-knitted *E. coli* bacterium, a bottle of wine and an award. After a short introduction to synthetic biology, iGEM and our project, questions on biology, biotechnology and genetics were answered by the smart participants. Afterwards, the answers were all provided with a little explanation. After two hours of quizzing, the proud winners “Mondays for MIBI” were awarded the first ever “iGEM Vienna Pub quiz champions” title. In addition to the quiz, a “Draw Your GEM” special prize, inspired by iGEM ITB 2019, was awarded to “FC SUPPI” who invented a bacterium capable of transforming environmental microplastics into tiny emoticons. Creative! Thank you to **Charlie P's** for hosting us and for all participants for making this a fair, informative and fun event sparking the interest and awareness for synbio.

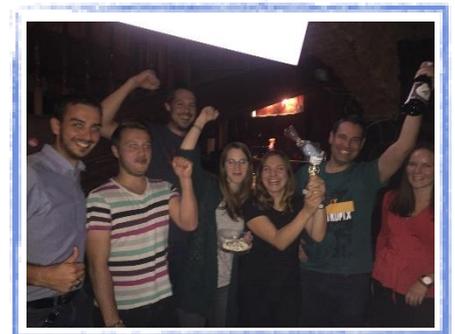


Figure 1: Pub Quiz winning team Mondays for MIBI

Update Human Practices

Briefly, Human Practices is about how our project affects the world and how the world affects our project. This means that we have been busy talking to experts in synthetic biology, aptamers, Buruli ulcer diagnostics and more, to steer our project in certain directions and to adapt it to the new knowledge gained from that exchange. For instance, we have been in contact with Aptagen, an expert in aptamer-based analytical solutions, who have kindly assisted us with trouble-shooting. We have also had contact with researchers in affected regions, who have provided some valuable insights into their work with Buruli ulcer diagnostics. Some interviews with experts in biosafety and ethics are still planned for the upcoming weeks. Moreover, education plays an important role in Human Practices. This is why we have arranged two visits to schools, our booth at the ERN, a project presentation at the Pub Quiz, and the presentation at the Kinderuni earlier this year.

Thank you to everyone who has contributed with their valuable input so far!

Modelling

After almost three months of intensive studies, we now have a working theoretical model that we will supplement with parameters from the laboratory. We are already very curious whether what we have theoretically considered will also apply in practice and look forward to presenting these results graphically on our homepage.

iGEM Alumni Meet up

On the 24th of September, After iGEM organized the first Alumni meetup in Central Europe in Vienna at the University of Natural Resources and Life Sciences BOKU. We enjoyed the presentation from the European Ambassador Nemanja Stijepovic, who presented the possibilities of getting involved with the SynBio community after the iGEM competition. After iGEM was launched by the iGEM-Foundation and is a new initiative for everyone who has participated in the iGEM competition. Since the beginning of iGEM, 30.000 students and instructors have participated in this program. With that thought, After iGEM was created to help those alumni stay in touch with the community, continue working on their ideas, join exclusively created programs and deepen their involvement in the SynBio community. Thank you to AFTER iGEM and European Ambassador Nemanja Stijepovic for this informative event.

If you are an iGEM Alumni and are interested in life after iGEM and programs such as being an iGEM Ambassador, Representative or Mentor, please check out AFTER iGEM website: <https://after.igem.org>

Time to say Goodbye

It's about time we say goodbye to you. In the end of October, we head to Boston, to the Giant Jamboree - the final event of iGEM - where we will present our project and all our hard-earned results of the past few months to a jury. This will mark the end of our project.

In the next newsletter, you will hear from this years' team for one last time. Small spoiler: We will once again express our gratitude in that last edition 😊 and provide a detailed report from the Giant Jamboree.

School Presentation

On Monday the 23rd we had the opportunity to give a lecture on genetics and the many perspectives of synthetic biology at the **HLFA Francisco Josephinum Wieselburg**.

On the beautiful, old school grounds, we held the presentation in front of about 50 16-19-year-old students, gave them examples of current problems and encouraged them to find their own solutions with synthetic biology. The tasks were provided by an iGEM team from Washington, who want to draw attention to the field of synthetic biology already in schools, which in our case was quite successful.

After that, we also had the opportunity to present our own project, which was a great exercise for the Giant Jamboree. We hope the students have learnt something from our visit and keep the field of synthetic biology and iGEM in mind.

Thanks to **DI Dr. Gudrun Nagl** for hosting us.

Planned activities

In the next few weeks our last activities will be on

- ▶ October 16th, **Bernoulligymnasium Vienna**: presenting our project and talking about synbio
- ▶ Wiki set-up and preparations for the main event in Boston
- ▶ Lab cleaning and return
- ▶ October 29th: flight to Boston for the Giant Jamboree

We will also keep you updated on our last activities on our social media channels and the team wiki!

Best wishes, iGEM
2019 BOKU-Vienna



twitter.com/igemvienna



facebook.com/igemvienna



<https://www.instagram.com/igemvienna/>

2019.igem.org/Team:BOKU-Vienna

