Aalto-Helsinki Work Log: August

Friday 1.8.
Our hotel is now booked, yay!

In the lab the plasmid backbones our now purified, once again. Also, PCR amplification to be sure. Our lab book is now being translated to English too.

Laura pretty much finished up the roll-up. She put our logo to vector form and cleaned up PCB background picture for the roll-up. She also drew a bunch of new Brian stuff and she's also the next line for the team profile.

In the morning, we also shot the final scenes to the Demo Day teaser video. Then Mikko started the furious editing work.

Niklas and Otto worked on our business model, answering where's the money in this thing were doing. Niklas came up with the product name ChanGene for our switch.

Oskari improved the data chart on our simulation, Lassi got the simulation hooked up to colors on the plate.

Then all 9 of us went to eat at a sushi buffet for lunch (Laura's fundatory event). It was delicious and fun.

Weekend 2.8. - 3.8.
People went nuts and did a ton of work on the weekend.

Laura drew so many things for our pitch deck on Saturday that her hand started hurting. Then she kept on going on Sunday. The pictures did turn out amazing, so it was probably worth it.

Mikko spent Sunday editing the teaser video and it came out really good!

Oskari programmed a million extra features to the simulation on Saturday, like glowing lamps and ever growing colonies on the plate.

Oskari and Pietu went through the slides and pitch on Sunday. They also visited the lab to check on the bacteria. In the evening Oskari came up with tough questions and clever answers for them.

Monday 4.8.
Demo Day-session in the morning at the Startup Sauna, only two days to go.

So we spent time designing the booth, ordering business cards and the rollup. Final touches on the pitch deck too, like adding pictures of Bartek and Markus. Laura went through all the pictures we have of the team for a slide show at the booth.

Mikko did marketing and the last touches to the teaser video.

In the lab, measuring the concentration of last weeks purified and PCR'd plasmid backbones. On the gel it looked like the PCR amplification didn't work at all, there was nothing on the gel. Gel purified ones seem to be ok. Also, restriction/ligation/transformation of the "C-module".

Niklas and Otto are both pretty sick, we hope they get better real soon.

Tuesday 5.8.
Laura's team member profile went out. Pitch and presentation was improved.

In the lab, Minttu and Laura(!) did colony PCR, gel and liquid culture from a most likely successful ligation.

The rollup arrived.

Wednesday 6.8.
The first big day. Summer of Startups ended with Demo Day, an event where all the teams taking part pitched their ideas to a large audience and set up booths to talk to interested people for the whole evening. A lot of people came by and they were amazingly positive and enthusiastic about what we are doing.

Most of the morning and afternoon was spent setting up for the event. In the evening after 18 we had first Laura, then later pretty much everyone talking to people at our booth. We had lab coats on, business cards to hand out and a cool simulation to show.

Thursday 7.8.
Basically, we met with Marko Ahtisaari about MIT and stuff. Then Oskari and Pietu met some biotech company ex-CEOs (Juhani Lahdenperä and Jari Rautio) who now coach biotech startups. They were pretty stoked about us.

And for the third meeting of the day, Oskari, Pietu, Martina and Minttu met Bartek, Markus and some other researchers to discuss the gene circuit and other things.

Meanwhile, Lassi analysed sequencing data because Geneious is amazing and makes it super easy. Seems like the biggest ligation succeeded perfectly. So did one of the lab measurement study parts. The other one is missing the promoter and the Uppsala part didn't receive it's terminator.

The “C-module” is coming together in the lab. Also, religating a part because it didn’t grow well.

Friday 8.8.
Kind of a slow day, winding down after the Demo Day craziness.

In the morning we went to disassemble our booth and clean up after it.

Then Lassi, Minttu and Martina met Bartek about the sequencing results. Half were perfect, the other half a bit dubious, so we’re remaking some, but the 4-part megaligation was fine.

While the day was otherwise slow, the lab worked double time and made both ligations and colony PCR during the same day.

In the afternoon there was another lab visit.

In the evening some of us went to Megazone, which was fun (though exhausting) and to eat at Fafa’s (which was delicious).

Saturday - Sunday 9.8.-10.8.
On Saturday Pietu and Minttu quickly took out some plates and cultures from the incubator and put them in the fridge.

On Sunday, Minttu and Lassi came to do Colony PCR and a gel to save on lab time. Also a miniprep of the liquid cultures and a nice pile of CAM-plates. The gel turned out alright, so work can progress.

Monday 11.8.
Oskari is going through another set of one-on-ones to discuss how things are going and what to do after August. Lassi, Otto and Niklas sat down with him today.

In the morning, fueled by some confusion of what to do, Lassi, Otto and Oskari wrote down all the things we have to do before the Jamboree in regards to iGEM. We tried to come up with some numbers on how long each thing will take. Then we started planning who would be the best to do which things.

In the lab, the usual, Miniprep, restriction, ligation and transformation. Our R2 brick combo is growing way too well on plates after transformation, it seems like there was no antibiotics at all. But it might just be the big concentration of DNA.

Tuesday 12.8.
We had a big (and long) meeting at 10. We decided a bunch of things. The teaching videos have to be put on hold, we won’t have to make them during the summer or even before the Jamboree.

We decided that 25% of the funding we get after the summer will be divided based on how much work people do in the Autumn (After Jamboree fees etc. are covered of course).

We went through everyone's field of responsibility in regards to iGEM. The one responsible only needs to make sure that work gets done, they are not responsible for the end result or the decisions in the field. And everyone can work on everything.

We have to find the proper angle in the Entrepreneurship Track for us and iGEM. Our construct is the fixed thing, but the way we present ourselves as a startup or a company is still being worked on. This ties into the business model, which Niklas and Otto worked on.

Otto and Lassi returned to the lab to make competent cells. This time 34 tubes of 100 microlitres were produced. At the same time, Martina and Minttu did colony PCR, TET-plates and transformed R2 for the third time, but this time it was heavily diluted.

Pietu was sailing from Inkoo to Kulosaari.

Laura and Oskari had a one-on-one meeting that turned into wiki planning. Lassi caught up with the plans afterwards.

Wednesday 13.8
Niklas researched business plans in the morning. We started an impromptu meeting in the afternoon about the business plan and attitude we will show at the Jamboree. This continued in the Markus-meeting where some good points came up from the experts.

Wiki underwent a massive overhaul by Lassi (though Laura called the shots), it looks almost completely different now. This proved that our wiki updating process works pretty well, changing the whole look took about 2 hours and all the content stayed the same. Laura planned the wiki ahead and started making a mockup of the main page as well.

Lassi also started giving out pages for people to write. Doing that through GitHub and Wiki Quickifier makes things a lot easier as we can change the look without having to do any changes to the content files and the people writing the content don't have to know how the wiki HTML setup works.
Our first testable unit is done! The first two rows of our construct are ligated together so we can start shining lights on the bacteria to see what happens. Also, all the interlab measurement parts are done (and glowing green!), so we signed up for it.

Pietu designed a LED rig for testing. He also sent e-mail to Aalto about us presenting ourselves (booth or just hanging around in a park with our roll-up?) at Aaltoparty, a study year kick-off event. We can go there to get people excited and talk to them about synthetic biology.

Otto wrote a first pass version of Modeling for the wiki, Lassi wrote Outreach. Research and Business should be coming along soon. It's a good start for the next 60 days before the wiki freeze.

Oskari and Pietu went to visit VTT after the meeting to get some microtiter plates.

Thursday 14.8
Pietu went shopping for LEDs. He returned with a sweet Arduino rig with three blue LEDs. He assembled it, programmed it and we got a cool thing with glowing blue LEDs.

In the lab there was miniprepping, figuring out why nothing seems to be growing on tetracycline, saving samples to another plate, making sequencing samples and transforming sequenced plasmids back to cells.

Wiki look is coming along, it should be easy to use, but look stunning. We're part of the way there already.

We debated more on the business plan, we ended up in a open source kind of place, that seemed to sit well with everyone.

Assembled a version of the gene circuit that we will actually be using in testing and that has all the fluorescent proteins put in that the end result circuit will have. That also very useful for checking out the sequencing results.

Planning the circuit testing process started in the afternoon, fueled by the points given by our instructors.

In the evening we went to play pinball (tables were Sinbad, Circus, Tee'd Off and Revenge From Mars) at Oskari's house, eat some BBQ food and play Crash Team Racing on a massive screen.

Friday 15.8.
As we decided what our business model will be like, Niklas started drafting a version by reading about biological open source and protected commons.

Niklas and Oskari tried to come up with ideas for our Heureka-meet on Monday. Oskari wrote up a detective workshop idea.

Last minipreps happened in the lab (hopefully) and we sent a lot of stuff of to be sequenced. This time we didn't want to wait that long, so Martina took straight to the sequencing company in the afternoon.

Wiki coding happened, nothing super exciting, but it's getting there.

Pietu got the LED box working. It took a day of drilling at Design Factory.

Monday 18.8.
New LEDs that are more closely in the right blue wave length are ready for pickup at Tapiola.

We are now officially signed up for the Jamboree!

Oskari came up with world saving bacteria idea for Heureka.

We had a great meeting at Heureka. The event manager and producer were very excited about us and synthetic biology. They had a lot of great ideas what we could do and thought that the things we've done so far are also a great fit for the event. The point is to excite the kids and fascinate the adults. Hopefully the children think that working with bacteria would be really cool and they'll still remember that 15 years later.

During the meeting we got the word that our synthesized genes have arrived.

Tuesday 19.8.
We met J&J again, the Biotech startup helper guys. They agreed to help us with the business model and case study in exchange for making their website look a bit better. After this we talked about the business model and thought about freemium.

Lassi analyzed the sequencing results with Martina and Minttu in the morning. Most of them looked fine, though Row 4 had terrible signal and it looked like Row 1 was missing a terminator. It turned out that Row 1 sequencing was just fine, it was just the gene circuit version in Geneious that had the wrong terminator. The fact that the BioBrick scar was there, but the terminator missing kinda tipped us off that something was wrong.

In the lab, the colonies that were checked by sequencing were moved to their own plates. Also, we put a test broth growing in a tube in the light and transformed synthesized genes and the bad signaled brick.

Wednesday 20.8.
Liquid cultures from yesterday's ligations and from one extra that is running out of sample. Restriction, ligation and transformation of synthesized genes and a few more. The overnight test culture from yesterday was divided in two and one is growing in the dark and the other in light. We tested the gloviness of GFP after 3 hours, but didn't notice a significant difference.

Our journal in the wiki is a cool looking two-columned timeline thing now.

8 of 9 chimeras are now done.

Oskari gathered up all the important companies we can ask support from. He also sent a message to our instructor herd to ask for contacts and ways to approach them.

Otto and Niklas bravely went to Helsinki to gather up people to answer the Virginia survey. It took a surprisingly long time, but they pushed on and in the evening received 23 answers.

Our gene circuit is now in only 3 separate parts.

21.8. Thursday
Colony PCR moved on to Friday, as only one plate was significantly growing (daamn youuu kanamycin). In the afternoon only one was looking good, so retransformed the others. Remade the first row with a stronger promoter to see if that affects testing.

We met Markus and Bartek and Sanni and talked about the last week and especially testing. We thought about what could be causing no apparent difference between light and no light. Could be the LVA tag, or the promoter or the light. LVA-tag could be removed with mutating PCR, we'll look into it.

Exhausted after yesterday's surveying, Otto and Niklas fell asleep at Otto's and overslept the next day. They stayed there drinking coffee and building the business model.

Laura scanned, vectorized and uploaded Lassi's, Oskari's and Pietu's chimeras to the drive. Then Lassi's profile went out with the aye-squedgehog.

Wiki work progresses fast, Oskari coded sponsor hover coloring, Laura continued work on the Journal and Lassi removed unneedeed things from the wiki.

22.8. Friday
The menu is going to undergo another change. The logos are lining up nicely too.

The lab did some more miniprepping, ColonyPCR and gel. Though the gel failed because it didn't run long enough. They also checked out the supermicroscope downstairs that might be useful for us at some point. The cells we wanted to look turned out to be dead though.

Oskari figured out mutation kits and NEB-primers.

Pietu got the rig done. He showed it off in the afternoon and it's really really cool. There's programmable lights on a microtiter plate and a foam container that fits nicely into an incubator.

In the evening we went back to Oskari's to play pinball and Crash Team Racing and it happened to be Lassi's birthday. Pietu spent the evening programming a randomly moving snake on the LEDrig. It looked really fancy.

Niklas and Otto wrote the business plan and had a great chess battle in the afternoon.

25.8. Monday
Otto and Niklas planned a business. The 0.1 version is fast approaching and ready to send off to BSUM.

Two successful ligations in the lab, one failed one. All in a day's lab work. Also translating the Lab book into English, only a month behind the actual work now.

Oskari sent e-mail to all the important people about sponsor opportunities. He also studied protocols for fluorescence measurement.

Laura drew the final chimera! It's Minttu's racoon-unicorn-leobard! She also added a bunch of logos to our general pages and blog.

Lassi wrote more content to Journal and wiki. Also, some things in the Journal can't be clicked, that needs to be fixed.

26.8. Tuesday
Pietu finalized the LEDrig and shoved it with Oskari into an incubator for testing. Then they worked on the business plan with Otto.

We got on VTT's Varioskan machine and started to test the first part of our construct with the help of Pietu's LED rig. Lab team split between VTT and our lab doing testing, and preparing sequencing samples. The results from the Varioskan look really promising!

Lassi added a ton of stuff into the wiki's Journal-section. He also started programming a cool mini navigation bar for individual wiki pages.

Laura added more logos to the footer and fixed logos, footer and header on the aaltohelsinki.com-site. The final layout for the wiki content is done.

We took Minttu's bowling ball for a walk to Startup Sauna, then went bowling with most of the team. It was fun, Minttu and Oskari got huge scores.

27.8 Wednesday
More testing, turns out that the expression wasn't as linear after 23 hours. Most likely they ran out of things to eat. Ligations to build the last part of the system keep going. In the evening Minttu started making pictures of our system.

Lassi finished the mini navigation bar that snaps into place when you scroll far enough. It looks super cool.

Laura wrote all the wiki plans to drive and started making content based on that. She also started plans on the poster. It'll be at least thiiiiiiiis cool.

The business plan was sent for comments. Otto also wrote preliminary text and added pictures for the modeling section.

Oskari read through articles and patents that might be too close to our idea. He also contacted the authority on gene technology to ask if we can bring glow-in-the-dark bacteria to events we are organizing.

We met Markus and Bartek in the weekly meeting to discuss the work ahead.

28.8 Thursday
ColonyPCR and gel in the lab, it seems like the ligation for the biggest part of our system still doesn't want to stick. Transformed new bricks (EYFP and CFP generators) for positive controls in testing.

Laura made a system for adding pictures to the wiki pages in all sorts of cool ways.

Lassi made the mini navigation bar one step cooler (with help from Laura) by automatically tracking where the reader is and highlighting the appropriate section in the top menu.

Otto wrote text and baffling equations to our Modeling section.

Pietu was in a meeting at ACE, thought about case study and got us sponsorship! He also started work on the newsletter.

29.8. Friday
Another try ligating the last missing piece of our system. Oskari did closer analysis on the testing data and it looks excellent.

Laura finalized the picture system in the wiki. Lassi got the mini navigation bar working on all the wiki pages.

The last official work day turned out to be a pretty long one. We finally left after 12 hours.