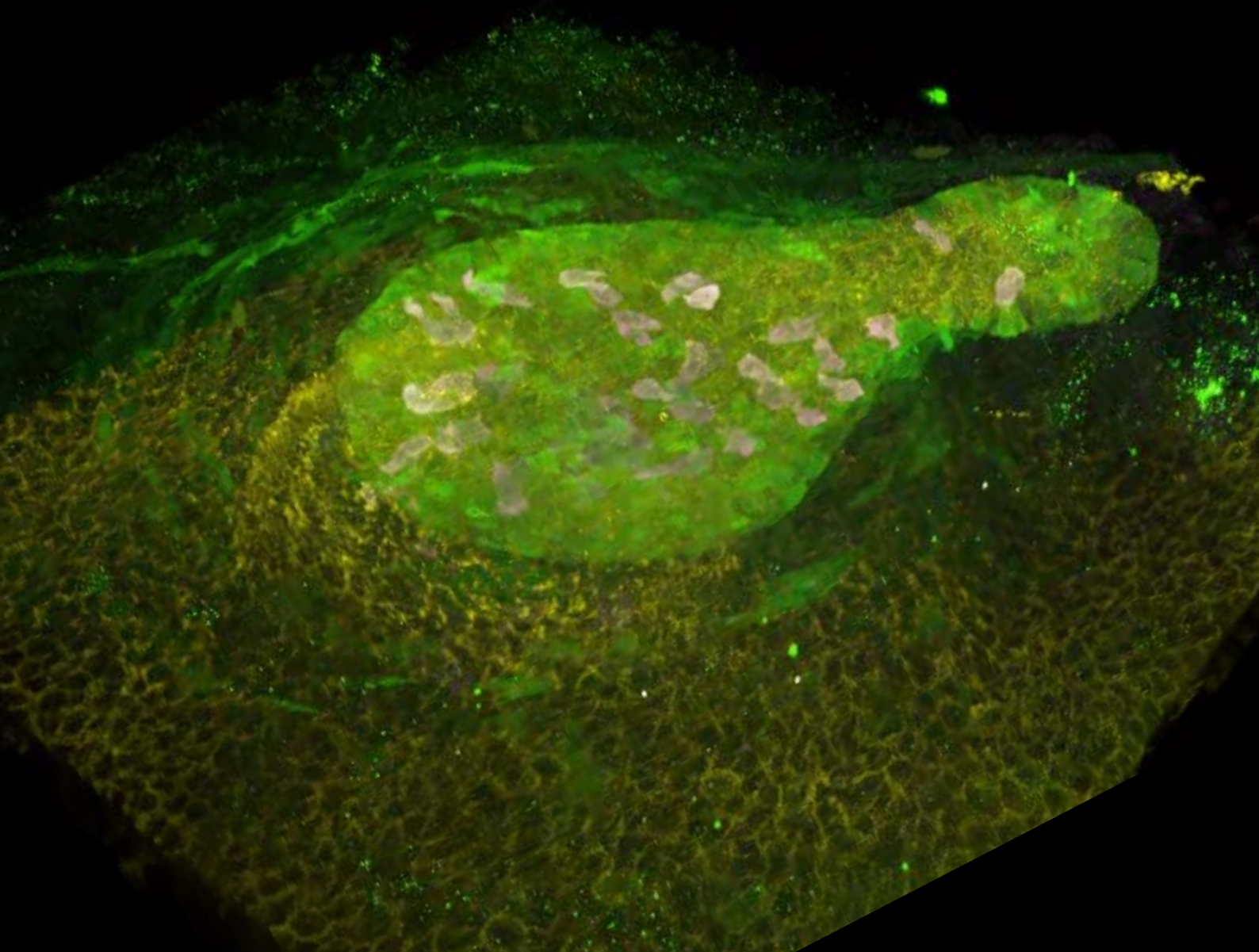
StuCom

Cancer, Stem Cells & Developmental Biology

May 2019



An Alumnus' Tales
Bart Emons

An Experience Abroad
Julian Buissant des Amorie

CSDB Retreat 2019
Get to know Heidelberg

MAY 2019

SPRING

April Activity
Escape Game

It was the eighth of April two thousand and nineteen. The hour is 19:35:00. The contenders were warned beforehand, extensively, that any cheating of any kind whatsoever, would be punished by being screamed at at a very high velocity and being thrown out of the window at a very high pitch. After the stopwatch application was found, the teams were off to a start. Already people were turning around chairs, reseating themselves, some were standing up. Mumbling was heard through the room. Whispers ensued. Certain Spanish words. Other words that have the same meaning all over the world as well.

The game was a Deckscape game called "The Mystery of El Dorado". It is an escape room game, but a table top game. You move your way through an adventure of epic proportions by moving your way down a nicely decorated, humble stack of cards. The cards tell the story of a failed expedition in search of the mythical city of El Dorado, a lost Amazonian city made entirely of gold.
Meanwhile, at Stratenum 2.112... A few nervous yawns were yawned. Some shrill shrieks were heard. Many marshmallows were handed out (all of them, actually). As were a small number of beers.

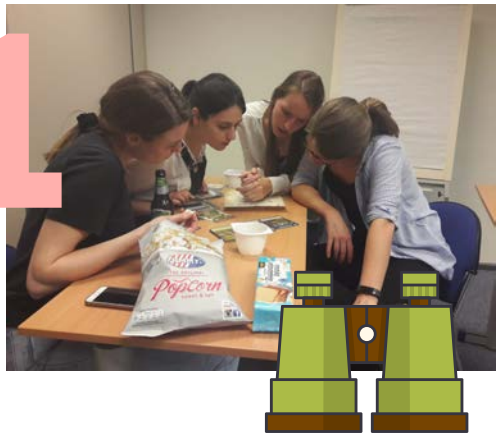
Considering the epic search to El Dorado, much less coolness was achieved. After a long search to no avail, disappointed you fly homewards. But your flight homewards is obstructed by the unexpected appearance of an (otherwise flightless) solid statue. The emergency parachute takes you groundward in relative safety, but from here on out awaits an adventure only the sanest of spirits could pursue.

Maps were turned over and cards were built into pyramids. Sixty minutes. That's what the box says this game is supposed to take. And at 20:38, out of the three groups of highly intelligent, severely educated, emotionally balanced, suspiciously motivated students, none was close to finish. At 20:49, all three groups were at exactly the same point in the game (though none near the end).

But then...

Surprisingly, incredibly, unmistakably, we all finished before April the ninth, and, after retracting penalties, having counted every second, the happy winners were the all-female (duh) team 1. Congratulations!

1



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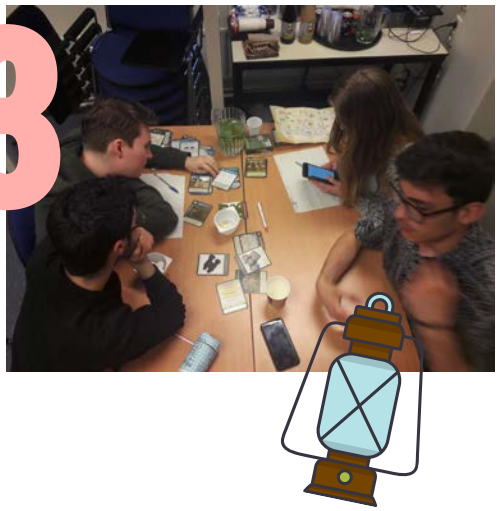


Join us on our next adventure touring and pub crawling through Utrecht on May 17th.

StuCom seminar

For the second StuCom seminar of this season, we had invited final-year PhD-student Susanne van den Brink. Many questions from the crowd resulted in a lively discussion, which went beyond the topic of the talk and touched upon serious ethical questions, the public role of science, and career choices. Concerning this last topic, Susanne was happy to share with us some personal career and lifestyle stories and advice, which you can read below.

My fascination with developmental biology started when I for the first time saw a movie of a gastrulating frog embryo in a lecture during my bachelor. It was clear from that movie that the cells were somehow communicating with each other and coordinating their behaviour, resulting in a complex multicellular structure. Since the day I saw that movie I knew that I wanted to spend my career in trying to find out how cells manage to make an organism, and therefore I decided to do the CSDB master's in Utrecht. During the Master I first learned about heart development in Jeroen Bakker's lab and then learned about cell culture-based studies in the lab of Alfonso Martinez Arias in the Cambridge University. During my stay in the UK I – more or less by accident – found a way to make embryo-like structures from stem cells. These structures, that we decided to call "gastruloids", are now starting to be used for embryological studies all over Europe.

During my master's it became clear that science was the right career path for me. I felt happy and "at home" in the lab, and therefore continued with a PhD. I decided to do my PhD in a more technical lab, the van Oudenaarden lab in the Hubrecht Institute, so that I could develop technical and programming skills. The first couple of years in the lab were challenging, partly because this lab works at a high level and all people in the lab are so smart that I frequently felt stupid and overwhelmed. But the atmosphere was great and supportive, and over time I managed to acquire a huge amount of skills that I am now applying to biology. I will graduate soon and am planning to pursue a career in science. I don't know where and in what field exactly – it is going to be hard to decide as there are so many exciting possibilities!

SOME TIPS/ADVICE FOR THOSE OF YOU WHO ARE PLANNING TO DO A PHD

DON'T GIVE UP IF YOU DO NOT IMMEDIATELY GET A REPLY ON YOUR PHD APPLICATION EMAIL

Pi's are super busy and receive tons and tons of emails. Sending reminders, or contacting someone else from that lab (by mail/LinkedIn/twitter) is sometimes necessary to get invited for an interview. In our lab, this is actually even a first filter: only people that send several emails are considered to be excited enough in joining our lab, and people rarely get invited after just one email.

BE CURIOUS AND DARE TO TRY SOME STRANGE/OUT OF THE BOX FROM TIME TO TIME

Also, invest time in looking at your results and microscopy images. Most people just don't really look at the things that happen under their microscope, and therefore, many important things are overlooked and missed in science. When we made our first gastruloid, we did not immediately realize that it was an embryo-like structure. However, I was just staring at them for hours, until I at some point started to see the presence of various "structures" in these weird things that I had made by accident. This observation made us realize that we had possibly made something interesting, and made us decide to do follow-up experiments and stainings that later appeared to be the start of a new field! We later heard that others had made elongated stem cell aggregates by accident before, but, they had not looked at them carefully enough and had just thrown them away as "failed experiments".

PICK A LAB THAT WORKS ON SOMETHING THAT YOU ARE PASSIONATE ABOUT

You will have to work on this topic for 4-5 years! A PhD is usually not easy, and has many ups and downs. It is way easier to deal with the failed experiments and failed projects that you are inevitable going to encounter when you are excited about and interested in the field. For me, it is important that my project is not about something small such as the function of one particular protein in one particular process. Instead, I really want to work on the bigger questions, and this may or may not hold for you, but is important to consider when applying to labs.

VERY IMPORTANT: PICK A LAB WITH A NICE AND KIND PI

Most pi's are nice, but not all of them are, and I know some people that have had bad experiences with pi's that are mean/stressing you out/do not allow you to take weekends off, etc. It is therefore important that you talk to people from the lab before starting there, and, preferably, also talk to people that are not in that particular lab but that are working in another lab on the same floor, as they can be even more honest about the atmosphere in the lab that you are applying to. And: trust your gut feeling. If something doesn't feel right during the interview, then you should probably not join that lab.

A PHD IS USUALLY HARDER THAN A MASTER'S INTERNSHIP

In internships you usually work on a relatively simple project that was already set up and (partly) working before you joined the lab. In a PhD you usually start from scratch with a new project, meaning that the first one-two years are mostly about learning technologies and getting experiments to work. The first years can thus be challenging, and most people only start to become more productive and have results in the last year(s). Don't expect things to work immediately – like they perhaps did in your Master's internships – it is normal that things take time during a PhD.

AN EXPERIENCE ABROAD

JULIAN BUISSANT DES AMORIE FOLLOWS AN INTERNSHIP AT THE **ROCKEFELLER INSTITUTE** IN **NEW YORK CITY**

As a biomedical researcher you are part of an international science community. I first realized this during my biomedical sciences bachelor in Utrecht. The famous researchers that are mentioned in the lectures come from all over the world and even some of the academic teachers you meet are foreigners. After my bachelor, when I started my CSDB master, I became part of an international group of students and during my major internship in the Snippert group at the UMCU I met and worked together with colleagues from many different countries. Clearly science is a global effort that depends on teams of people with complementing backgrounds that engage in international cooperations. Once I appreciated this, the quiestion of going abroad became more of a 'when' than an 'if'.

So, when to go abroad? During the bachelor felt a bit early to me and I really enjoyed the courses that were taught in Utrecht. After that, the first internship of the CSDB master programme had to be conducted in Utrecht and later I think I want to do my PhD in the Netherlands. This leaves the second or minor internship of the master as the first – and in my opinion – best option to go abroad. Now that I had figured out the 'when', I had to start focusing on the 'where'.

Somewhere around April, I decided to ask the PI of my first internship whether he could recommend any place to go. He suggested that I look into the lab of Daniel Mucida at Rockefeller University (NY, US), which studies mucosal immunity. This subject was very different from what I was happily working on at the time, namely MAPK signaling in colorectal cancer organoids. Nevertheless, I decided to give it a chance. After all, Daniel Mucida had been invited to give a talk at Utrecht University the coming June and this meant that I could actually meet him in person before fully committing to going to his lab on the other side of the world. A great luxury! I genuinely enjoyed his talk and after a good conversation Daniel and I agreed that we would arrange a Skype meeting to further discuss the possibility of doing my minor internship at his lab. During this Skype call we talked about potentially interesting projects that I could be involved in and decided that I could start arrangements to join his lab in January. This seemed like a lot of time to

organize everything but in the end it turned out that there was also a lot to be taken care of. First of all, when going to a US University you have to supply the institution with many, if not all, of the following: proof of financial support, proof of medical insurance, a letter of recommendation, a CV, a letter of motivation and a letter of Utrecht University stating that they approve your internship and that you will be allowed to continue your studies once you return. Meanwhile, you will have to register your minor internship at Utrecht University, meaning that you will have to find a Utrecht examiner

THERE'S SO MUCH TO DO IN A CITY THAT NEVER SLEEPS

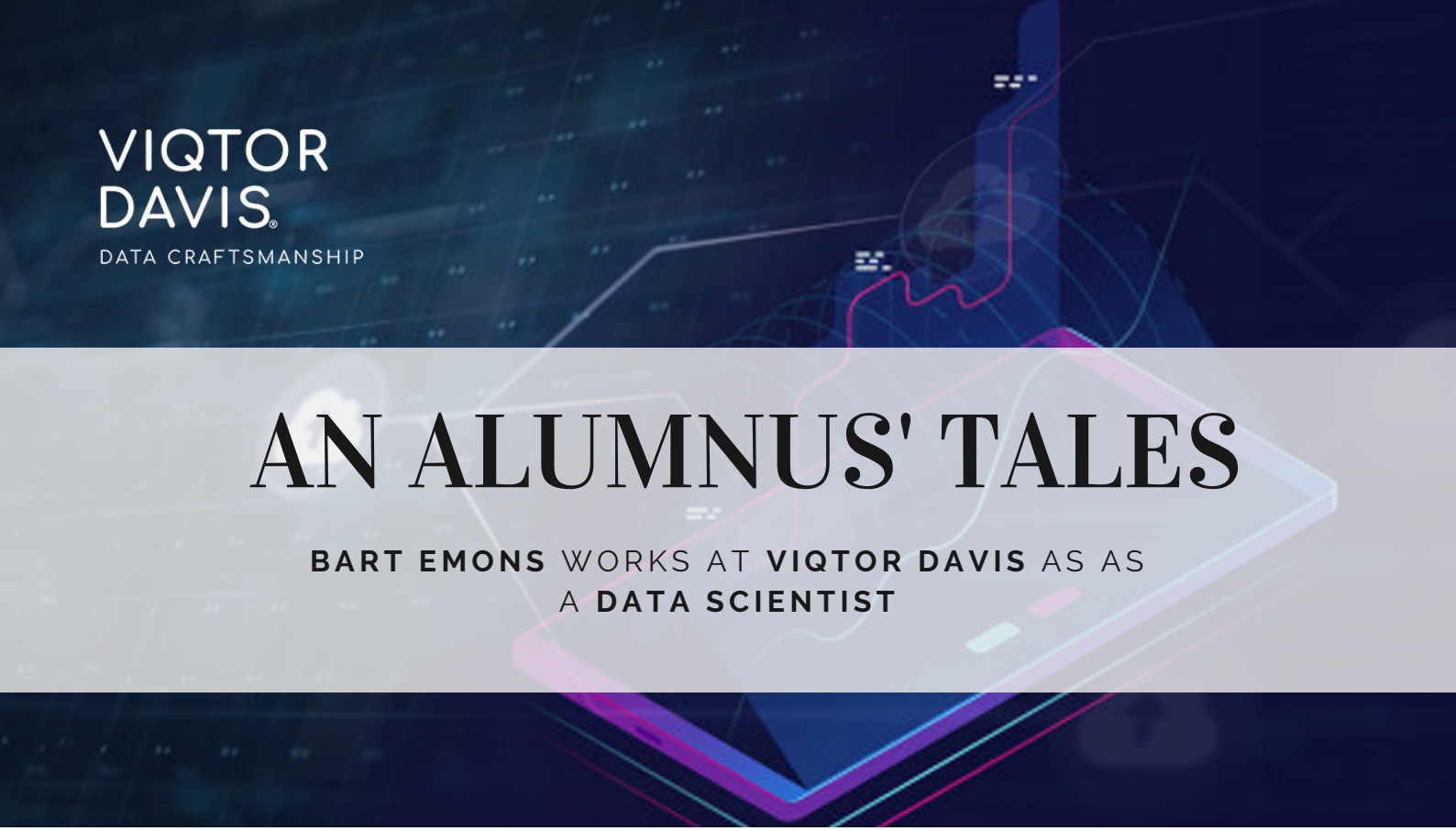
who, together with the master coordinator and board of examiners, will have to approve your internship with a signature. All of this takes time, which means that you have to start these procedures early, as you will often need official approval from both Universities in order to apply for grants and your visa. Eventually I was only in time to apply for one more grant in addition to my U/Select grant, since many grants have a deadline 3 months before your departure. Fortunately, housing was easy to arrange. My girlfriend had been to New York for a semester abroad two years earlier and she was still in contact with her landlord in Brooklyn.

In January the time came for me to go to the US and I was very excited to discover New York and start a new internship in the Mucida group. We had decided that I would work on two different projects under supervision of two Postdocs. The first project aims to identify communication mechanisms between intestinal epithelial cells and intraepithelial lymphocytes during infection. On the other hand, the second project focuses on the immune response to enteric adenovirus infection. Both projects have introduced me to many techniques that I had not encountered during my previous internship. For instance, FACS, primary cell culture and in vivo mouse work. All of which are very common techniques here among immunologists. While I view acquiring experience in these new techniques as one of the main goals of my minor internship, it was also interesting to become acquainted with the American work ethic. Long workdays are the norm, but people are very flexible about taking long lunch breaks and arriving late. I feel like private life and work become one continuum, which is probably largely driven by the fact that the Rockefeller campus offers almost anything you need in life. There are housing for the PhD students and Post docs, a gym, a restaurant, several cafeteria and a bar which serves free beer between 18:00 and 19:00 three days a week!

Still, this free booze cannot keep me off the streets for long since the world outside the campus offers so much to explore. New York has proven to be the international hub I had thought it to be. There is so much to do in the city that never sleeps! While trying to get used to many of the New York habits, such as getting coffee to-go and going out for breakfast, I also try to stubbornly stick to some Dutch habits. The best example is probably the fact that I immediately bought a bike when I arrived here and I use it as my major means of transportation. It takes some time getting used to in the busy traffic of Manhattan, but in the end I think it is one of the fastest ways to move about in the city. You just need a bell, mudguards, some fancy bright lights and an excessively strong lock (or locks!).

All in all, I think that science offers a great opportunity to go abroad and I would definitely recommend going during the minor internship. Arranging everything beforehand can take a lot of time and can be a bit stressful, so I would suggest starting preparations about 6 months in advance. Once you arrive at your destination and have settled in your new environment, it is all worth it!

Julian Buissant des Amorie



AN ALUMNUS' TALES

BART EMONS WORKS AT **VIQTOR DAVIS** AS AS A **DATA SCIENTIST**

I'm very happy to share with you my experiences in my journey towards becoming a data scientist. About me: Bart Emons, 26 years old, and a 2017 graduate from both the Cancer, Stem Cells & Developmental Biology master and the Biotechnology – Process Engineering master. I hear you think: 'What an odd combination…?" You're right, as far as I know I'm the only one out there ;)

PhD or data science company?

When I was about to finish my last internship at AMOLF I had somewhat of an idea what to do next. I wanted to combine data science and biotechnology, work on my programming and modeling skills, and preferably start a company along the road. As many students in our field, I doubted whether I first should do a PhD or go straight towards a (data science) company. Both options have their pros and cons. As a PhD student you get a lot of freedom to explore all facets of your models, build your perseverance, and create a strong niche network. On the other hand, data science companies often have a large diversity of datasets, a higher development pace, and they teach you good coding practices. All nice skills, but it was actually the prospect of being involved in sales processes and product development early on in my career that convinced me to join the data science startup Simplxr. Well, that used to be our name until this January. We joined forces with Jibes, DataDogs, and Entity to become Viqtor Davis. The acquisition brings a large versatility of beta backgrounds (physicists, (bio)informaticians, (software) engineers, and mathematicians) that allows us to solve more interesting cross-disciplinary problems. And from a small startup we've become one of the largest data science companies in the Netherlands. Quite an upgrade!

Technical struggles of data scientist

To be fair, I had only a vague idea as to what my day-to-day activities would look like. I knew that a data scientist spends most of his hours on data cleaning and exploration (80%), and less on actual modeling (20%). Now I know that you also have to spend hours on detailed industrious work where you try to align different datasets with each other or search for bugs. For example, one of my favorite functions happened to work a little different in a new version of a package (damn you Pandas…). It took me a full day figuring this out while crossing out all options. It's not all fun and games! These annoying things can make the life of a data scientist difficult, but when you bear them the

reward is high. There is nothing more satisfying than discovering a new useful phenomenon in your customer's dataset, especially when it's counterintuitive.

Data scientist, the social aspect

A data scientist helps organizations make better decisions based on their data. The very nature of the job requires empathy, because you need to take other people's concerns into account when designing a solution that fits their needs. When I just graduated, I thought I would rock the world of data science if I focused on learning more techniques and models. Well guess what, I couldn't be more wrong… Skilled data scientists don't just analyze data. They can communicate their insights in a compelling way that non-technical decision-makers can understand and act on. I had to seriously train myself how to read customers and properly deliver a message, which is still an ongoing process. Many data scientists like to build fancy models and cool-looking graphics but it's often better to keep analyses intuitive and focused (which is part of Viqtor Davis' motto). A strategy which has been proven to be very effective with my first two customers (a large Dutch dairy producer and a top-three financial institute in the Netherlands).

Future of data science

While progress in machine learning and AI will indeed automate our work, this will happen within the more technical aspects of the profession (data clean-up, engineering, mass estimation of models). This will allow the data scientist of the future to focus more attention on the high-level job functions:

- Ask the right questions
- Choose the right problems to solve in organizations
- Effectively communicate the insights derived from the data
- Understand the ethical implications of their work

Automation can only take the data discovery process so far before the analytic competencies of data scientists are used to extract the real, contextual value from the data. There will only be greater demand for data scientists who are agile thinkers on the edge of new technologies and techniques.

Advice for a data science career

Some last advice if you're interested in becoming a data scientist:

Focus on learning programming practices for all-purpose languages (C#, Python, Java, etc.) and a database language like SQL. Start experimenting with your own projects and practice, practice, practice! University may teach you the programming rules but doesn't teach you how to program. Join data Meetups, participate in a Kaggle competition and read blogs.

Data scientist has become a catch-all term for actually three different jobs: a data analyst, a data scientist, and a data engineer. I would distinguish these three jobs as follows: the data analyst generates quick business insights via dashboards (skills: web-development, visualization, communication), the data scientist mostly works on statistical models supplemented with AI techniques (skills: machine learning), and the data engineer builds the (big) data infrastructure (skills: ETL, databases). Three jobs that require quite a different skill-set. Ask yourself which one you would like the most and actively ask for it in job interviews. Try to stay away from companies and recruiters that require you've mastered all three professions.

Search for a place where there is proper mentoring on your soft skills. The products you build are only as good as the problems they solve! I've been in many situations where new products were presented but did not get accepted because they solved a problem that nobody experienced.

Add me on LinkedIn to stay in touch and feel free to contact me (b.emons@simplxr.com or bjm.emons@gmail.com) if you have any question. Good luck deciding on the next step in your career! There are no bad decisions, only no decisions.

A very CSDB Oasis: Retreat at Heidelberg

Rumor has it from June 12 - 14, StuCom will be taking you to the most beautiful city of Germany. Yes, it is no other place than the romantic old university town of Heildelberg! The excitement is surreal; yet at times preparation may seem quite daunting. Worry not because in this column, Becoming a Heidelberger 101, StuCom will get you acquainted with this lovely town in no time!

Speak like a local:

Guten Tag/Guten Abend (gooh-ten tahk/gooh-ten ahh-bent) – **good day/good evening**
Auf Wiedersehen (ouf-vee–der-zey-en) – **goodbye**
Bitte (bitter) – **please/you're welcome**
Ja/Nein (ya/nine) – **yes/no**
Sprechen Sie Englisch? (shpr-ek–en/zee/eng-lish) **Do you speak English?**
Wo sind die Toiletten? (vo zint dee toy-let-en) – **Where are the bathrooms?**
Ich hätte gern… (ik hetter gern) – **I would like…**
Noch ein Bier bitte (nok ayn beer bitter) – **Another beer, please**
Die Rechnung bitte (dee reck-noong bitter) – **The bill, please**

Explore like a local:

Picturesque Heidelberg has inspired many poets, writers and philosophers (Mark Twain, Goethe, Eichendorff , …) alike, earning the title UNESCO City of Literature in 2014. You can follow the footsteps of these brilliant thinkers along the Philosophenweg while admiring the Old Town from afar. Inside the famous Heidelberg Castle, you can also find the world's biggest wine barrel (capacity: 220,000 liters)! Looking back in time, Heidelberg also has a lot to tell: how the earliest evidence of human life in Europe was discovered, how the oldest university in Germany was built, how a student prison came to existence out of the mischief achieved by many generations of elites & how the first bicycle was invented!

Eat like a local:

Besides the infamous beer and sausages, Heidelberg cuisine has much more to offer:
Saumagen (sow's stomach)
Studentenkuss (waffle-nougat-dark chocolate confection)
Lewwerkneedl (German-style beef dumplings)
Dampfnudeln (Vegatarian bread roll)
Quetschekuchen (plum tart)

Research like a local:

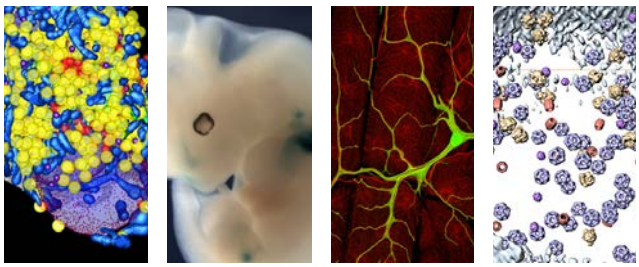
In addition the prestige Heidelberg University, this old university town is also the base of cutting-edge life sciences research bodies, namely EMBL, the German Cancer Research Center & 4 Max Planck Institutes. Remarkably, 9 Nobel prize winners & more extensively 56 Nobel Laureates share a connection with Heidelberg University or the city of Heidelberg. And this number does not seem to stop growing (perhaps after CSDB retreat visit).

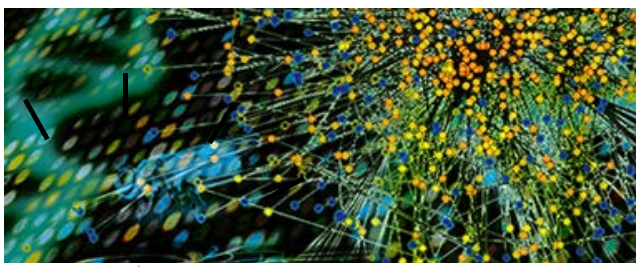
Retreat Highlight: European Molecular Biology Laboratory

Among the list of research institutes we will visit during the retreat is the Heidelberg headquarter of European Molecular Biology Laboratory. Herein, StuCom would like to provide some useful facts behind this cutting-edge research facility.

A little competition went a long way when the American physicist and molecular biologist Leo Szilárd and Nobel Prize winners James D. Watson and John C. Kendrew shared the idea of unskewing the US dominant research. The idea florished to the establishment of a centre of excellence from July 1974 on a basis of an intergovernmental treaty of nine European countries plus Israel. That centre is now known as European Molecular Biology Laboratory (EMBL).

EMBL Heidelberg not only hosts state-of-the-art research facitlities; its extraordinary architecture also allows for a unique Jazz festival annually.





5 Units

Cell Biology & Biophysics
Developmental Biology
Genome Biology
Structural & Computational Biology
Directors' Research

Many scientific breakthroughs have been made at EMBL, including two which have been recognized with Nobel Prizes. Jacques Dubochet was awarded the Nobel Prize in Chemistry in 2017, for using vitrified water to prepare biological samples for electron microscopy; a technique that is still at the heart of cryo-electron microscopy. Christiane Nüsslein-Volhard and Erich Wieschaus were awarded the Nobel Prize in Medicine in 1995, for the first systematic genetic analysis of embryonic development in the fruit fly, in which they identified genes responsible for the body plan of insect embryos. This examplifies the mission of comibing interdisciplinary research across 5 research units with Mathematics, Physics & Chemistry

Today, EMBL is considered Europe's flagship laboratory for basic research in molecular biology, its six European sites attracting both young investigators and established scientists from all over the world.

EMBL European Molecular Biology Laboratory

Life in the Lab

CURRENT STUDENTS ON THEIR INTERNSHIPS

It is immensely important and fun to learn from each other about what we are doing in the lab. That's why we want to use this platform to exchange your stories from the lab. As a start, three members of the StuCom who work in different buildings on the Uithof will speak about their internships. But we want to contact other first-year and second-year master's students to tell us about their experiences for the next newsletters. If you are excited about your experiments and want to share them with us, please send an email to **stucomcsd@gmail.com**

Who are you?
I'm Marleen Aarts, a bit more than 22 years ago I was born in the most beautiful city of the Netherlands: Utrecht. After finishing my bachelor Biomedical Sciences at Utrecht University, I started the CSND master in September.

What is your internship?
I will give you a small insight in my life as a student in the Medema lab in The Netherlands Cancer Institute (het Nederlands kanker instituut, NKI) located in Amsterdam. The NKI is an independent research institute that is sharing a roof with the Antoni van Leeuwenhoek hospital (AVL). This is a specialized cancer hospital that collaborates with the NKI to tackle cancer. In the Medema lab we study DNA repair as well as chromosome segregation. My project is about the dynamics of chromatin after double strand breaks (DSB). In order to repair double strand breaks by either homologous recombination or non-homologous end joining, the chromatin needs to be opened. It is known that after the repair of a DSB the chromatin can be restored to its original conformation. However, it is now suggested that after DSB repair the chromatin alteration can be maintained at the breaksite, which is then called an 'epigenetic scar' of the DSB. Nonetheless, it has not yet been shown that this 'scar' can really occur. This is where my project comes in. In order to study this 'scar', we make a break in a gene promoter with CRISPR/Cas9 whereafter we study if there is a change in epigenetic landscape and gene expression of the gene. For this, I use different common techniques like RT-qPCR, Western Blot and FACS. Also, to study the epigenetic changes I do Chromatin immonuprecipitations (ChIPs) and Methylated DNA immunoprecipitation (MeDIPs).

Why did you choose this internship?
The particular reason to join the Medema lab was actually because I wanted to work on chromosome segregation and aneuploidy. Nonetheless, when I applied they offered my this project and I thought it was really cool so i decided to take it! What I love about my lab is the interaction of the people and the variety of techniques that is used. We have a lot of different personalities in the lab, but somehow everybody still can get along pretty well. Also, we have a close collaboration with the Rowland lab that is in a different department. We also mix well with the people in that lab, which I think is nice. What I like a bit less about my lab is that our PI, René Medema, is not so much present. He is in the board of directors of the NKI/AVL. Therefore, he is very busy and his focus is not always on the research that is performed in his lab. Overall, I think that the working environment in the NKI is quite good. A lot of people are very open to help with your project either by sharing materials (equipment, but also antibodies for example) or knowledge. Another thing that I like of the NKI is that because the NKI is a big institute (more than 50 research groups) there are also a lot of good speakers coming to give seminars. Also, every Tuesday and Thursday we have research club meetings where a PhD or Postdoc presents his/her work to the rest of the institute. Because of these meetings, I get a better view of research that is going on in different areas of cancer research.

Who are you?

Well hello there, my name is Jasper van Schelt and I was born in Vianen, a small town to the south of Utrecht. I did my biology Bachelor's here in Utrecht and after CSDB I want to continue with a PhD.

What is your current internship?

I am doing my major internship in the Casper Hoogenraad lab for molecular neuroscience where I work on a project investigating the role of a dynein adaptor protein during brain development. Using two different conditional knock out mouse lines we aim to find out how congenital brain abnormalities arise in patients with mutations in the gene encoding for this adaptor protein.

Tell us something cool that you're doing.

One of the techniques that we used is called ex vivo electroporation, were we inject DNA in the ventricle of the embryonic mouse brain and apply a current to transfect the neuronal stem cells lining the ventricle. We section the live brain and grow the slices in a dish. Remarkably, these slices develop practically identical to the way it would in the animal. This allows us to label individual cells and subcellular structures, and perform rescue experiments in our conditional knock outs with either wildtype or versions of the gene with mutations found in patients with brain abnormalities or other diseases associated with the same gene.

What do you enjoy most in your group?

I really like working on this project especially because we are working with a very small team. I am working with my friend Merel van Luyk, and just our two supervisors. This gives us more responsibility which I think is good practice especially because our supervisors give us the freedom to design and perform our own experiments.

Who are you?

My name is Sarah Carter, and I am an American in my second year at CSDB.

What brought you to Utrecht and to CSDB?

As a young scientist, I became interested in reducing animal use in biomedical research to decrease unnecessary suffering. My interests led me to a summer research internship in the lab of Prof. Dr. Pratip Bhattacharya at MD Anderson Cancer Center (Texas). It was during my work there that I first learned about organoids and read the work of Prof. Dr. Hans Clevers, which eventually evolved into an inquisitive fascination with organoid technology. Spurred on by this newfound passion, I decided to switch both academic disciplines (chemistry to biomedical science) and countries to study organoids in Utrecht. This began at UMC Utrecht in the lab of Dr. Jeffrey Beekman, who uses the forskolin-induced swelling assay (FIS) in patient-derived intestinal gut organoids with cystic fibrosis (CF) to screen for potential new therapeutics. While there, I not only learned the technical aspects of organoid technology, but also learned about the technical and ethical challenges of using organoids in biomedical research.

What is your current internship?

While I valued the technical laboratory experience I gained from working in the Beekman group, I desired to investigate more societally oriented questions related to science. Following this motivation, I decided to explore the medical ethics field and began my second internship at UMC Utrecht in the group of Prof. Dr. Annelien Bredenoord, where I finished my project on April 5th!

What do you enjoy most in your group?

After taking this step from the laboratory into ethics, I believe I have found my niche: I've really enjoyed my work here, where words are my raw data, and I can apply my critical thinking and writing skills. I've also enjoyed working with Mike, Karin, and the other interns, who have been supportive as I try to navigate both the Dutch language and the world of ethics. These experiences, both in terms of empirical skills and conceptual grounding, provide a solid foundation for (hopefully!) working on a PhD in the field of medical ethics in the future.

YOUR FAVORITE SCIENCE STUFF

ON THIS PAGE WE SHARE SOME OF OUR FAVORITE SCIENCE CONTENT ON THE WEB OR ELSEWHERE. BUT WE WANT TO KNOW WHAT YOU LIKE! SO PLEASE SHARE WITH US YOUR FAVORITE STUFF AND GET IT ONTO THIS PAGE IN THE NEXT NEWSLETTER!

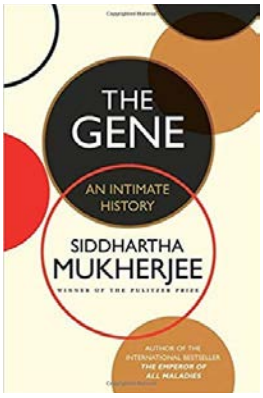
MAIL TO **STUCOMCSD@GMAIL.COM**

Darrion
Facebook Page (also Instagram!)
For when you need some humor about lab's life

An incredibly funny & sassy depiction of a biology lab with a twist! Warning: do not check this page while running an experiment, you might laugh your tips off!

Jonas Mars recommends:
The Gene - an Intimate History by Siddharta Mukherjee

I saw your recommendation of Mukherjee's book 'The Emperor of all Maladies'. The other major book he wrote is - in my opinion - even better, especially for the developmental biologists out there. The title is 'The Gene - An Intimate History'. Informative, exciting and a must-read for all that are interested in the history and future of genes and genetics!



Bitesize Bio
Webpage

Like a quick-and-dirty Miniprep, just clean enough for sequencing, this website explains the principles and troubleshooting of a wide array of techniques in molecular biology quickly and simply enough to keep you from drowning in Google search. References are also listed for more in-depth understanding.

Pint of Science
Special Event

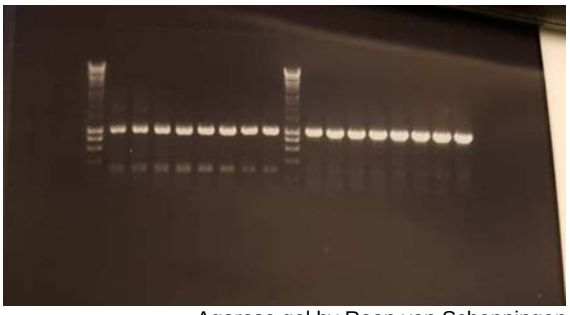
Run by volunteers and established by a community of postgraduate and postdoctoral researchers in 2012, Pint of Science Festival delivers interesting, fun, relevant talks on the latest science research in an accessible format to the public – all in the pub!
Mark your calendar from May 20 - 22 for Pint of Science Festival in the Netherlands!

WALL OF FAME & SHAME

Nothing in science is more important than sharing your knowledge. Here at StuCom we take that very seriously. On here, for every newsletter, we are going to showcase some of the best and some of the worst that we, CSDB students, have produced during our internships. Together on one page, so that you can determine for yourself what is successful and what is.... less so.

The best picture we get will be featured on the front page. Share your own achievements with **stucomcsd@gmail.com**

Game of Thrones,zebrafish heart edition, by Mara Bouwman



Agarose gel by Roan van Scheppingen

"They always say the dog resembles the owner, but as I don't have a dog (sadly) my Western Blot resembles my freckles.
Anna Pagliaro

MINDFUL SCIENTISTS

Lab work may seem daunting and a bit of a routine at times. StuCom would like to remind you to celebrate the small wins and think about your day in the lab under a different lense. Fill in the blank and share with us your wildest/ most creative thoughts on these scenarios via **stucomcsd@gmail.com**.

If your cells/ organoids/ model animals could speak, they will say ___
If you could survive on a media, it would be ___
If you could be labelled by a fluorescence antibody, it would be ___
If you could be a DNA sequence, it would be ___
If you could be a protein complex. it would compose of ___

Heart-broken by Thi Tran

COLOPHON

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CSDB INSTAGRAM
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FRONTPAGE PHOTO
The front page shows the winner of the picture challenge:

Mario Barrera Román

The picture shows an embryonic mammary gland from a 17.5 days old embryo. The skin is labelled in yellow (at the background) with an anti-E-Cadherin staining. The transgenic model labels green the Lgr6 expressing cells with GFP and in magenta there are displayed the tdTomato+ cells which are the results of lineage tracing of Lgr6 at the age of 11.5 embryonic days. Thanks to the 3D imaging technique developed by the Rios team, we can observe the whole mammary gland and analyze the dynamics of the Lgr6+ population through time.

This StuCom newsletter was written and designed by
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