



InCognito

For your monthly study-related needs and feeds.

February 2017

Suggestions, feedback or comments? Let us know at newsletter.cognito@gmail.com.

Brains Abroad: Anupama Nair in UM

Interview by Annelies Hoorn

This month we interviewed Anupama Nair, a second years MBCS student who is currently doing an internship at the Multisensory Perception Lab in Michigan. We asked about her experiences so far, and we were wondering what it is like to live among fifty students in one house!

At the moment you're in Michigan, can you explain to us what you're doing there?

Currently, I'm doing my second internship with Dr. David Brang at the Multisensory Perception Lab at the University of Michigan, Ann Arbor. In broad terms, I'm looking at interaction effects between the visual and auditory cortices. I'm interested in how auditory stimuli can be used to evoke visual hallucinatory experiences in non-synesthetic populations. I arrived in Michigan at the beginning of the Fall semester in September 2016 and have been here ever since. I didn't have a specific aim when I was looking up research labs abroad, other than the fact that I wanted to try something new and exciting. I didn't have experience in the area of multisensory perception or the techniques used in the lab before I got here but it hasn't taken long for me to fall in love with my research!

What do you consider is the best experience you've had living and studying in Michigan up until now?

Wow, I'm not sure where to begin! Michigan has introduced me to a range of fulfilling experiences, both academically and personal. On the personal front, I would say that my daily life in Ann Arbor is a strong departure from the one in Amsterdam. For instance, I currently live in a co-op which is a community house run and managed by university students of different ages and belonging to different faculties. Simply put, I live in a big house with 50 other students, and we all manage the house together, as a team. It takes a little getting used to, and you have to be very flexible and open-minded to be comfortable in such a setting, but very soon I came to appreciate the finer aspects of such an arrangement. E.g.: You make a ton of new friends from all over who are never too far from you.

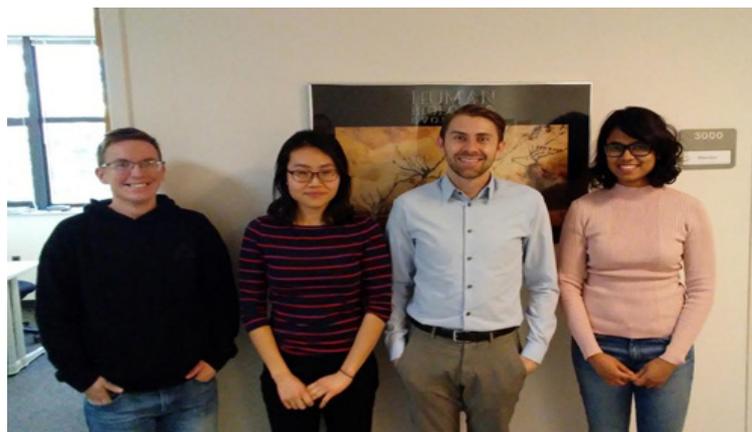
As for the academic front, I've never felt more fulfilled working on anything as I have in Michigan. I work on my project independently which gives me a sense of ownership, but at the same time, I get just the right amount of guidance from my advisor that keeps me from straying from the goals of my project. My advisor recently transferred to the University of Michigan, and his lab is new, yet



the facilities are excellent, and UMich places a lot of importance on Cognitive Neuroscience research which works well in our favour. As of now, I'm undergoing training in running EEG studies that I will begin with shortly, but some of the other things I enjoy are the long lab meetings (where we discuss data analysis as a group, with everyone's inputs helping to shape up the most optimal analysis techniques), the weekly tutorials on neural data analysis and the underlying theories, the bi-weekly lectures and talks by distinguished faculty on interesting topics and the opportunities to attend conferences as a lab. I've had some great experiences here so far, but my research has definitely been the icing on the cake.

What are your experiences with Michigan so far?

Ann Arbor, the city I'm in, is a cozy college town, much smaller than Amsterdam, but since students dominate it, there's plenty of restaurants, bars, clubs, etc. to go to and events to attend (For all the sports fans, Michigan has the largest stadium in the United States, so the game days are pretty crazy with parties happening all day). My lab is relatively small, with six of us so far. Most of my labmates work with epilepsy and tumor patients to acquire intracranial data on simple auditory-visual tasks (ECoG).



Multisensory Perception Lab with Anupama on the right & Dr Brang in the middle

EVENTS

Talk with the FNWI dean
6 February, 14:00, Hall of Science Park

FSR will organize an open talk session with Peter van Tienderen, the Dean of the science faculty. This session is open for all interested students. So, if you have a burning question you always wanted to ask the dean: this is your chance!

Bootcamp ACE Venture Lab
6-10 February, ACE Venture Lab, Science Park 608

ACE Venture Lab organizes a 5-day intensive training program for students, researchers and industry specialists who want to turn their science or high-tech idea into a successful company. We invite a team of Silicon Valley specialists and startup experts to mentor you on launching your business.

F5-session: Artificial Intelligence
16 February, 15:00 - 19:00, Pakhuis de Zwijger

What is artificial intelligence exactly? What useful things will AI bring us? How will it impact humanity? And, not least, what can Artificial Intelligence do for your company? Answers to these and many more questions will be addressed at our next F5-session and you're invited! For more info check the website: <https://dezwijger.nl/programma/artificial-intelligence>

Going abroad: Scholarships and Funding (in Dutch)

28 February, 14:30 - 15:30, REC-C1.03

Are you planning your stay abroad for an exchange, internship, research or a master? Join the information session about financing your stay abroad. This information session will be held in Dutch.

Continued on page 2

Alumnus interview: Katerina Georgopoulou

Interview by Linda Jolink

Katerina graduated from MBCS in 2014 from the Cognitive Neuroscience track.

Can you describe your current job? What does a regular day at work look like?

Currently I am employed at Electrical Geodesics, Inc. (EGI for short). This is a U.S. company designing and producing high-density EEG systems with up to 256 electrodes. My position is that of Support Engineer, I work remotely from Amsterdam and cover the European area. My daily tasks are diverse, each time I travel to a different university, hospital or conference around Europe to install equipment, solve technical issues and offer training sessions or demonstrations. On other days you will find me in front of a MacBook assisting EGI users online.

What do you like most about your job? And which things do you dislike?

In this job I meet interesting and skilled persons within the field of neuroscience, medicine, psychology, artificial intelligence and many more. I like discussing their work and brainstorming on how to help them achieve their goals. EEG has made a promising comeback with advanced methods of analysis like source estimation and network dynamics, while EGI devices are now also used for neuromodulation and multimodal recordings together

“EGG has made a promising comeback

- Katerina Georgopoulou

with fMRI, TMS, MEG, tDCS, DBS and fNIRS. Since new scientific discoveries are often driven by technological progress, it's exciting to support this forward movement and be the first to share cutting edge developments with the community.

As always there are also downsides. Being a remote employee is flexible but makes it challenging to stay in touch with colleagues. Traveling 2-3 weeks per month seems glamorous but comes with less home-time to share with friends and family. Still, these are minor drawbacks

that can be overcome with some conscious effort and smart planning.

What did the career path look like that led you to this job?

After some thought I decided not to pursue a PhD and instead explore alternative career paths, especially those combining science with business or technology. Finding my current position was a combination of luck and active searching. I stumbled upon it on the Internet and it caught my attention, since I knew the EGI systems through my internships. Initially I didn't consider myself a technician and I almost didn't apply for this reason. Looking back I'm happy I did!

I've always shown a clear preference for human EEG research, this matched the job profile quite well. In the past I was a bachelor tutor for EEG courses

“Your dream job may be waiting at an unexpected place.

Katerina Georgopoulou

at the UvA, this helped to improve my communication and teaching skills, which are as important as technical knowledge in this role. I also worked as a freelance tourist guide during my studies. This was completely unrelated to science, yet I learned to deal with traveling in a professional setting, speaking to groups and handling complaints. It's surprising how this experience comes handy now. Last but not least, I was a member of Cognito. This formed the true foundation of my success and I recommend it to y'all ;-)

What would be your advice to fresh MBCS alumni who admire a similar job at a company? And are there any career/study-related choices you regret or would have done differently when you look back?

During the master I contributed to several projects that I genuinely enjoyed, this resulted in taking longer to graduate. At the time I was concerned about my progress, however later on I actually found my choices turning out to my advantage.



As cliché as it may sound, I believe doing what you love is key for getting where you wish to be. Taking the time to make the right choices for yourself can be more effective than rushing into something with doubt.

That said, most companies are interested in practical applications. Rather than focusing on a single theoretical topic, you can broaden your options by gaining expertise in a method that could be used for a variety of purposes. When selecting an internship, look for a supervisor who has mastered these techniques and make sure you'll have the chance to learn and practice them. Then take initiative, use Google and talk to lots of people since your dream job may be waiting at an unexpected place.

BIRTHDAYS

We would like to send our best birthday wishes to those born in February!

First to our second years:

Wenyu Nie (1st)
Andreas Sebastian Wolters (4th)
Lynn Katrina A. Sørensen (6th)
Dirk Koster (9th)
Jeannette E. van Ditzhuijzen (18th)
Sammy Heutz (21st)
Dimitrios Katsimpokis (23rd)
Rosanne Tuip (29th)

And to our first years:

Amber Brands (7th)
Felix Soldner (11th)
Karlijn van Heijst (12th)
Annelieke Müller (27th)

Interview with Anupama continued...

I'm responsible for my own project which involves running behavioural experiments using multisensory auditory-visual stimuli which I will now follow-up with an EEG study

Can you tell us something about your plans for the future? Would you for instance like to continue doing research after this internship?

I would love to continue in this field, but I also want to take a (meaningful) break from academia and research before applying for PhD. I'm on the lookout for opportunities in applied settings that still allow me to stay in touch with neuroscience. Fingers crossed!

What is the biggest problem you've encountered in arranging this internship abroad?

I sent out multiple emails to many professors all over before zeroing in on this lab. I faced a few disappointments along the way (such as being accepted in a lab, and then letting the opportunity go due to some visa and monetary constraints) before I got accepted to this one. Looking back, I think it panned out for the best. As for the problems, my current internship is a good mix of challenges and learning opportunities that have helped me develop my research skills. I started off as a complete novice in the field but thanks to a very encouraging advisor and equally helpful labmates, I feel I've come a long way!

From your experiences, do you have any recommendations for us in studying abroad?

Yes. Go for it! Take the leap and have the best experience of your life in an absolutely new country! It is sometimes difficult to establish rapport with a potential advisor or get a feel for the lab from far away but being very clear about your goals and what you expect from the internship and effective communication makes things easier. A few of us have additional considerations with visa issues and monetary affairs but there are some scholarships out there to bolster your financial needs. If no other pressing issues stand in your way, I think it's definitely worth the plunge :)

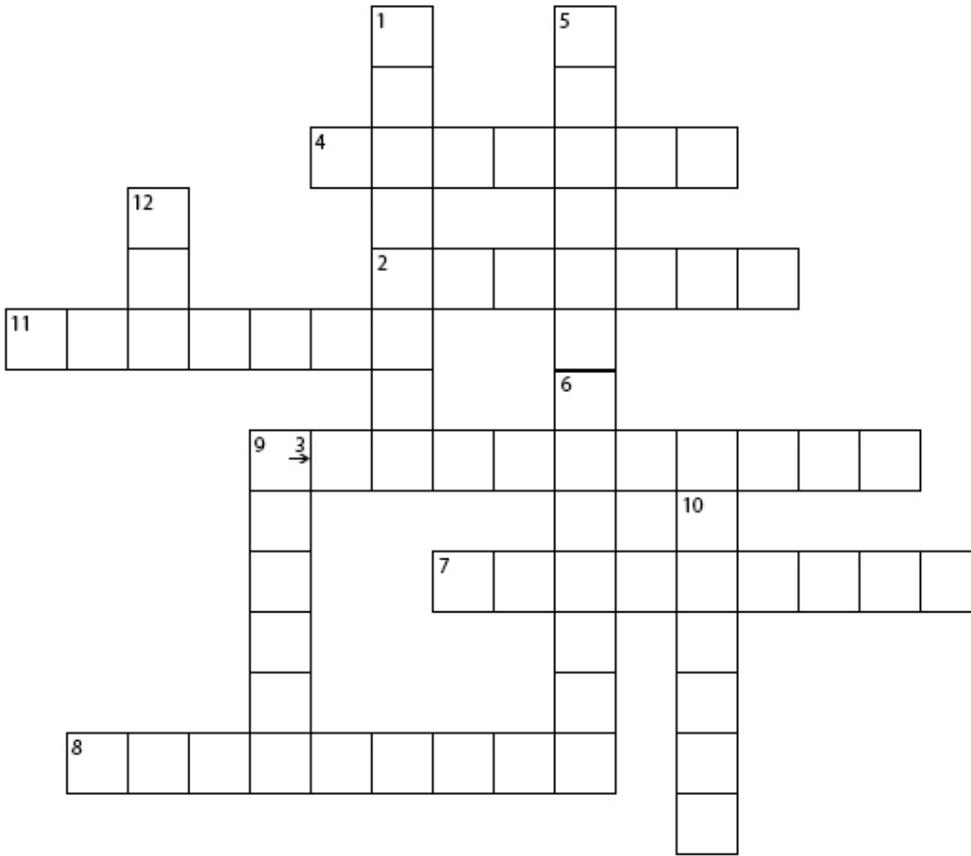
Words inCognito: crossword

Send your answers to newsletter.cognito@gmail.com. Whoever gets most answers correct, wins!

The answers and winner will be announced next month. Good luck!

Clues:

1. Even if I'm at the bottom, I'm still a G.
2. We can only function thanks to its fix of hapiness.
3. When one is removed, all cognitive & motor functions can be still recovered.
4. I may model, but I ain't pretty.
5. So we can do what we cannot (yet) to humans.
6. It takes 2 to tango.
7. No one is denying that I'm the real star.
8. Whose "food" for though gets me tipsy everytime.
9. Without which American football players can turn into granmas.
10. As the French call it...
11. Network of future heroes and/or alcoholics.
12. Gets bored when we sleep

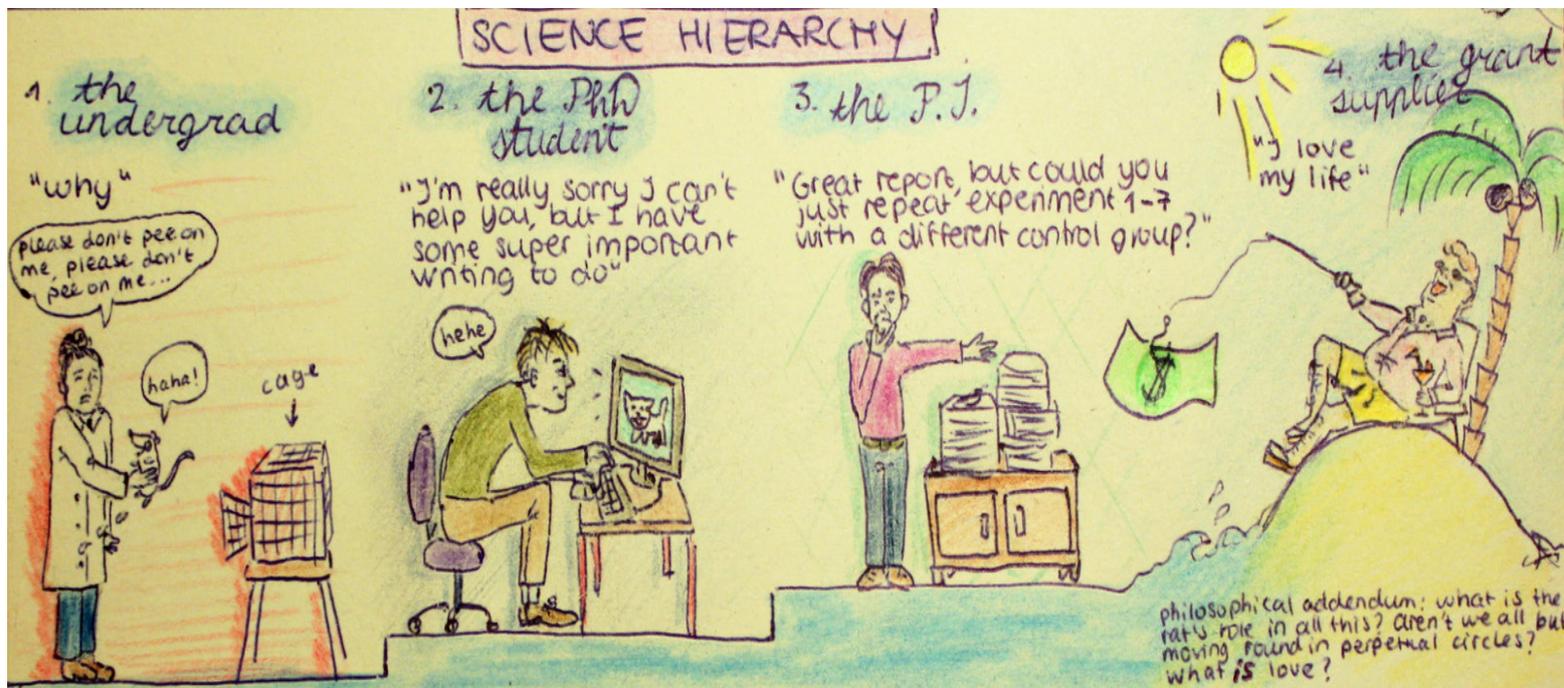


Advertisement



Comic Corner

Illustration: Linda Jolink



Science Corner: life on Proxima B, the brain on LSD and an unexpected honour for Trump

by Linda Jolink

Once again, an eventful month has passed for science and society. For this month's Science corner, we highlighted three scraps of interesting discoveries and upcoming research.

Starting off in space: as you might have heard, a new neighbour-planet was discovered last year. The red dwarf Proxima Centauri is the Sun's closest stellar neighbour, located at the humble distance of 4.3 light years (40 trillion km) away from Earth. Last year, scientists reported an earth-like planet orbiting around this star: the small planet Proxima B has a minimum mass of 1.3 Earth masses and the equilibrium temperature is within the range where water could be liquid on its surface.¹ Unfortunately, the planet is way too far away to be within travel distance; so how are we going to find out if there could be life on Proxima B? Dutch scientists found an inventive way to tackle this problem. Astronomers from the University of Leiden want to take a closer look at the light reflected by the planet. This light is polarized, just like the blue sky we see on earth consists of polarized sunlight. Using a technique called spectrography, the astronomers aim to separate the polarized light into different components. If there is oxygen in Proxima B's

atmosphere, there will be a dip in the light at 760 nanometer, and, says astronomer Frans Snik, "that almost undoubtedly means life".² Snik hopes to discover life on alien planets before humans will set foot on Mars.

On a more neuroscientific note, fMRI recordings of the human brain on LSD raised major attention in 2016. Basically, the functional connectivity of the visual cortex with about every other brain structure was enhanced in subjects provided with LSD.³ Recently, more of the LSD miracle was unraveled at the molecular level. LSD is extraordinarily potent (you need very small doses of it compared to other psychedelic drugs) and lasts for a long duration. Pharmacologists from California were able to shot a 3D x-ray image of a frozen LSD molecule bound to a single serotonin receptor.⁴ They noticed something strange: drugs typically come and go from receptor proteins like ships pulling in and out of a port. But when an LSD molecule lands on the receptor, the molecule snuggles itself into the receptor like your girlfriend in the only blanket on the bed. This 'receptor lid' explains why LSD works so long, and also gives insight in why it is so potent: if it stays on the receptor for a long time, even very small doses can have a perceptible effect. However, a lot

of questions still remain, as the researchers only looked at two of the 40 brain receptors that LSD can bind to.

To finish, here's a positive message for the United States' new president. Even though the attendance at his inauguration ceremony wasn't as great as he might have hoped, there is a different honour reserved for Donald Trump: biologist Vazrick Nazari named a newly discovered moth species after him. *Neopalpa donaldtrumpi* has characteristic yellow-white scales on its head and its genitalia are smaller than those of other species in the *Neopalpa* genus.⁵

References:

1. Anglada-Escudé G, et al. (2016). A terrestrial planet candidate in a temperate orbit around Proxima Centauri. *Nature*, 536(7617):437-40.
2. <http://www.volkskrant.nl/wetenschap/met-vloeibare-kristallen-buitenaards-leven-ontdeken~a4447853/>
3. Carhart-Harris, RL, et al. (2016). Neural correlates of the LSD experience revealed by multimodal neuroimaging. *Proc Natl Acad Sci USA*, 113(17):4853-8.
4. Wacker D, et al. (2017). Crystal structure of an LSD-bound human serotonin receptor. *Cell*, 168(3):377-389.
5. Nazari V. (2017). Review of *Neopalpa Povolý*, 1998 with description of a new species from California and Baja California, Mexico (Lepidoptera, Gelechiidae). *ZooKeys*, 646:79.

Food for thought: Vegetable Curry

by Annelies Hoorn

We all know that feeling at the end of the month, when you realize that you are running out of money and have no idea where it went. But to survive, we need to eat. So here is a simple recipe I made. The ingredients are inexpensive, the dish is healthy, easy to make, and you can use leftover vegetables!

Ingredients (for 2 hungry pers.):

- 2 cups of Rice
- 2 onions
- 3 cloves of garlic
- 1 tbs of turmeric powder, 2 tbs of cumin, black pepper, 3 tbs curry powder and chili powder (add at your own risk). If you have, 2 tbs of green herbs (e.g. thyme, oregano)
- For a spicy boost, 1 cm of ginger root sliced in tiny pieces
- 1 pack of coconut milk (250 ml) (Go-Tan is the best!)

- Olive oil or coconut oil
- 500 gr. of vegetables you have (e.g. tomatoes, broccoli, spinach, sprouts, anything really)
- Replace the meat with starch or protein (e.g. beans, chickpeas, pumpkin, (sweet) potato, eggs, nuts)
- A small spoon of arrowroot to make a nice thick sauce (optional)

Procedure:

Start to cook the rice (full grain can take 45 minutes, otherwise start it later). Slice all veggies. Put a spoon of (coconut) oil in a wok. If you use (sweet) potatoes, sprouts or pumpkin you need to cook it shortly (5-10 min) before adding it. When the wok is warm, add the onions, garlic and all the spices. When the onions are translucent, add the other vegetables. When all vegetables are cooked well (10 -15 minutes), add the coconut milk and if you have,

add some mango or nuts. Let it boil slowly for a few more minutes. Then add a spoon of arrowroot powder and wait for 2 more minutes - the texture will be great! Drain the rice when it's finished and bon appétit!



Photo: Annelies Hoorn

HOROSCOPES

Aquarius

January 20 - February 18

by Daphnee Chabal

February 2017 could not go any better for the Aquarius. Known for their creativity and outward expression of thoughts and ideas, the Aquarius is a real fish in the sea of innovation. Always ready to tackle challenges, new projects always mean more fun - and more opportunities to shine. There is nothing better than feeling these spins grow and strengthen inside your brain, is there? Let neuroplasticity do its job, so you can do yours. What a thrill. This month, the Sun enters the Aquarius orbit, which only means one thing: Game. On.

Just like optogenetics allow for the most lazy mouse to become a full grown workaholic, the sunshine gives you a free card to explore the most rebellious, individualistic, futuristic corners of your nature. No stones will be left unturned for the Aquarius, who will cruise through research methods, tackle data analysis like Muhammad Ali tackled Joe Frazier, and pen publications, like not even the sky is the limit. It is time to listen to your intuition - you are more sharp than ever, and ideally positioned to dissect mice brains, monkey brains, and even dolphins' if you wish (which you should). The sword can be double edged though, sometimes making you feel as if inside a Pressure Cooker. It is easy to feel helpless in the waters of unseen worlds and horizons. Cortisol may reach high levels. Oxytocin may feel thin. But as long as you trust your instinct, Dopaminergic neuronal growth promises to remain on the rise - expanding like a forest of corals in the warm embrace of the sunbeams.

SUBMISSIONS

“ Hear your friends say fun or ridiculous things? Send us a quote at newsletter.cognito@gmail.com and we will add them in the next issue of InCognito!

- the Newsletter gals