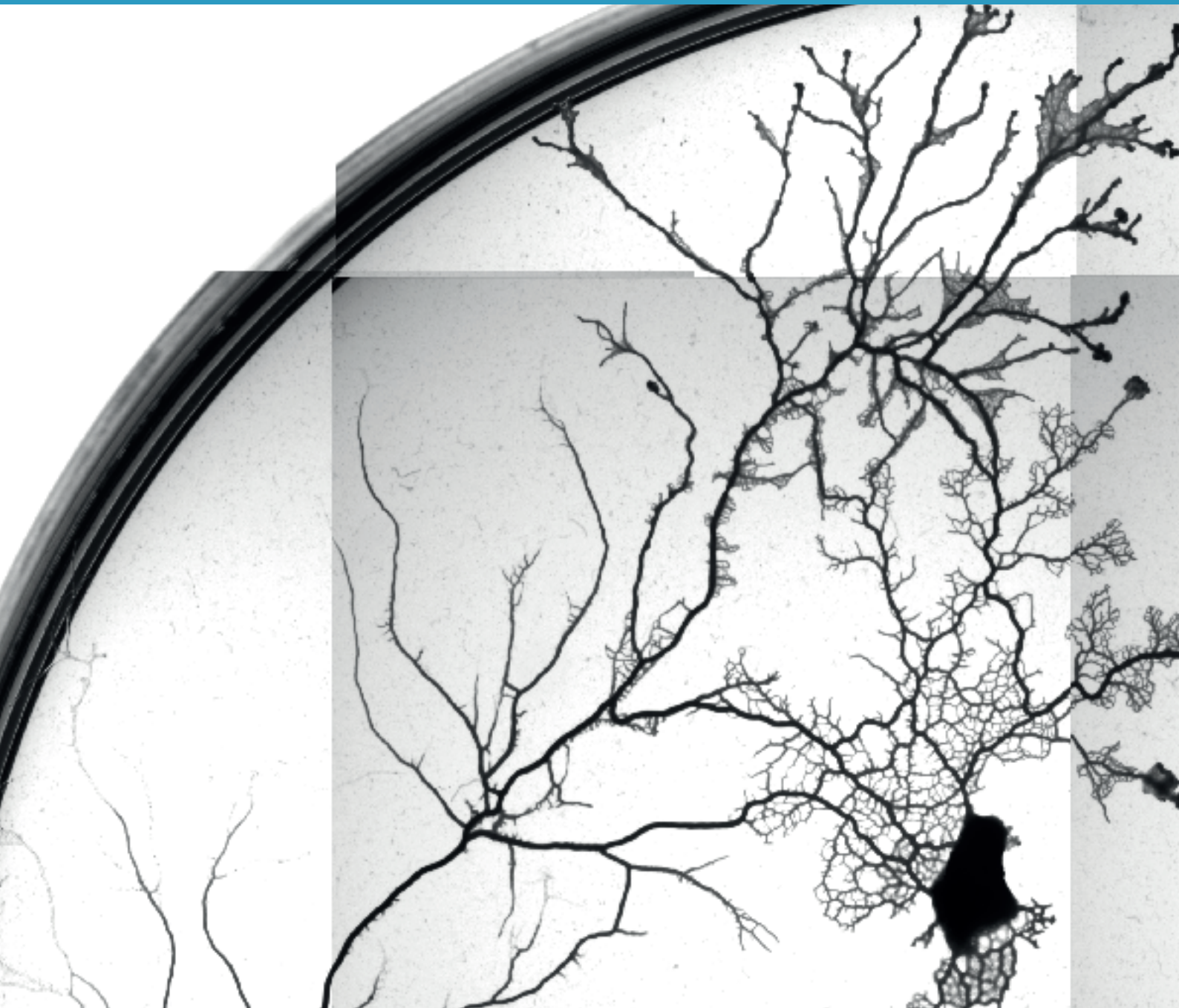


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Newsletter of the Göttingen Graduate School for
Neurosciences, Biophysics, and Molecular Biosciences

GGNB *Times*



RESEARCH

Wiring the Brain
What's in a circuit?

ALUMNI

Nico Posnien
*Becoming an independent
group leader*

ON-CAMPUS

Student-Organised Conferences
*Horizons - Neurizons -
Encephalon*

OFF-CAMPUS

Frozen Lives
Refugees around Göttingen

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WELCOME MESSAGE



The GGNB exists since 2007 and connects students from a dozen different life science PhD programmes in Göttingen, and 50 different countries from all over the world. Apart from annual events such as the GGNB Summer Games or the GGNB Science Day, however, we have had little opportunity to learn more about our fellow students in other programmes, their research, and their experiences. This changes now with this first edition of the GGNB Times, a newsletter designed to showcase the opportunities GGNB provides and to share our accumulated knowledge across programme boundaries. Your research, student organised events, opportunities for young scientists, opportunities to get involved with activities, and tips for recreation in and around Göttingen – all this will be covered in the GGNB Times.

This is a newsletter from GGNB students for GGNB students. The organisers of this newsletter are students in our common graduate school, as are most of the contributing authors. Therefore,

we hope that we can provide a platform that is actually useful to you and stimulates your involvement with the GGNB and its students beyond your own programme. However, this is a learning process for us as well. So we will always welcome your feedback to improve the next edition. We of course also welcome your direct contributions – be it as author of an article or as member of the organisational team. Last but not least, we would be happy to act as a forum for exchange about the topics we cover in this newsletter. So whether you agree or disagree with an article – write in! This is – first and foremost – your newsletter and we hope that we can make it come alive with discussion and exchange through your participation.

You will find in this first edition encouraging research stories by other PhD students, suggestions for professional, extracurricular and leisurely activities in and around Göttingen, reports on exciting conferences and activities, blogs by a PhD student and a PI on some of the challenges of our

everyday life and career in science, information about job opportunities in and outside academia from GGNB alumni, and also some fun pages with comics, crossword puzzles, and the winners of our first GGNB Times Photo Contest. So whether you are new to the GGNB or already approaching the finishing line of your PhD – there will be something new for you to discover here.

We hope that you will enjoy the newsletter your fellow students put together for you, and we hope that it won't be too long until you receive the next of many editions – maybe this time with your story in it.

Sven Truckenbrodt

THE GÖTTINGEN PHD STUDENT JOURNEY IN PICTURES

by Anne C. Nolfes



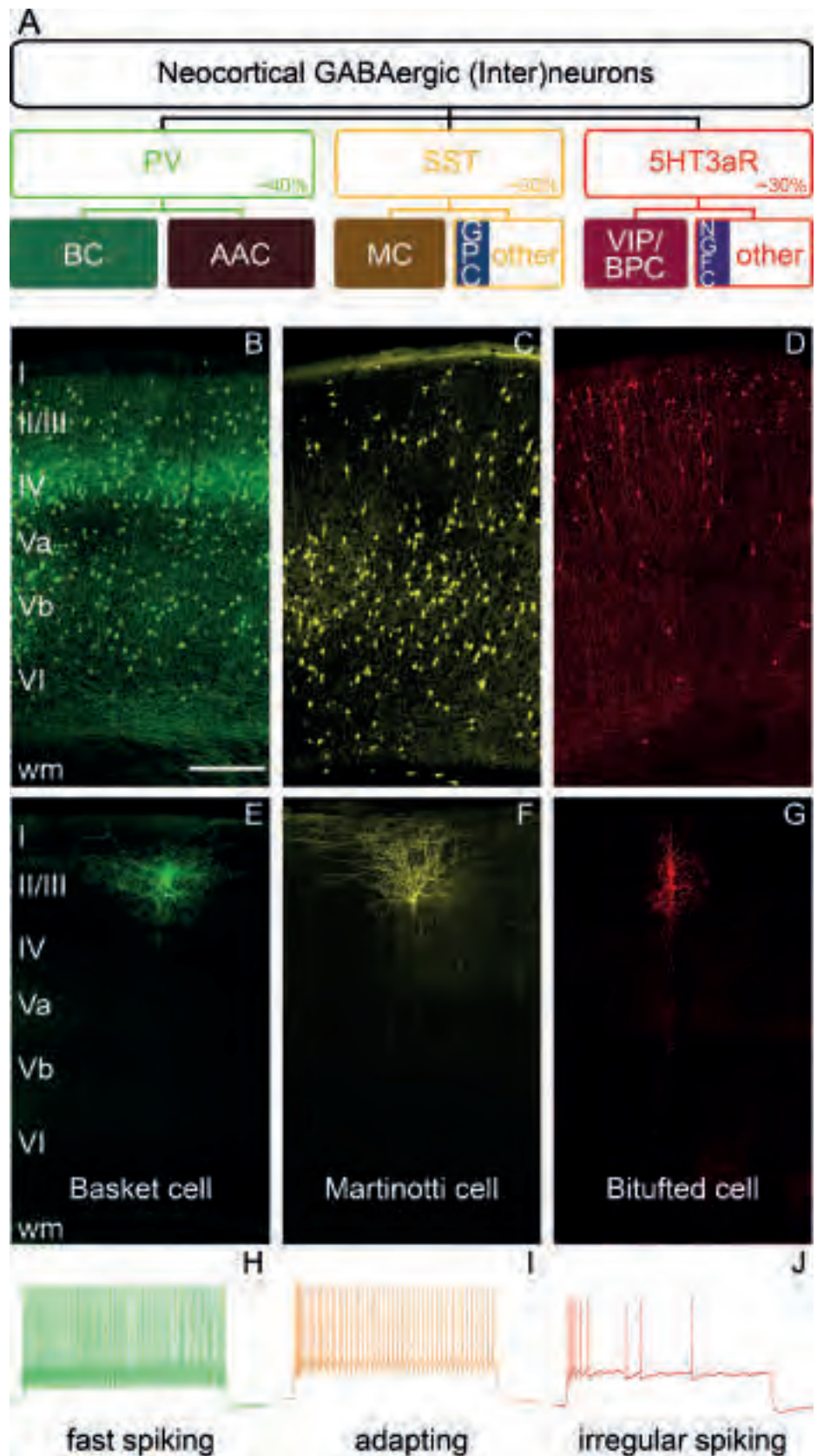
What's in a circuit?

It seems we are in the age of "circuit research". There is hardly any issue of *Nature* or *Science* where there is not a novel circuit described. Curiously, often with very little morphology – it thus misses a "face" and is hard to grasp and remember. In 2011, the famous Göttingen Nobel laureate Bert Sakmann gave a talk at the 10-years ENI-G symposium entitled "Cortical column: if you don't understand the function, do the structure". In fact, this carries the essence of what drove me into neuroanatomy: the realization of deep scientific satisfaction to uncover the wiring of a part of the brain as complex and undoubtedly important as a cortical column. For this study, we have chosen the mouse barrel cortex (Feldmeyer et al., 2013).

So what's in a circuit? Neurons, of course! Well, what kind of neurons? Many different types! But what is a type? Now it is getting difficult. Ask any two scientists what they believe a cell type is and how it should be defined, and you probably get three answers. So, what I am going to elaborate on are three major questions, which drive the experimental work that we are doing at the Institute for Neuroanatomy: (1) what cell types do really exist, (2) how do they wire up to form a functional circuit, and (3) how does this bewildering complexity all come about during development?

What is the definition of a cell type? In the cortex, neurons can be distinguished into excitatory glutamatergic (ca. 80-85%) and inhibitory GABAergic cells (ca. 15-20%). Some scientists say that excitatory cells come in one flavour, i.e. the pyramidal cell (and its small siblings, the star pyramidal and the spiny stellate cell), some scientists say there are over 2000 (!) types (Sorensen et al., 2015). Some scientists say that inhibitory neurons come in (at least) 6 flavours (Staiger et al., 2015) whereas others have claimed that each inhibitory neuron is its own type (Parra et al., 1998). In fact, whereas the experts could not agree on a specific terminology for cell types (Ascoli et al., 2008), at least they agree that GABAergic neurons can be subdivided into 3 broad non-overlapping classes, as defined by neurochemistry (Rudy et al., 2011; Figure 1). We want to contribute to the definition of cell types by quantitatively studying their morphology, electrophysiology, molecular make-up (including neurochemistry) and precise input-output description by using appropriate Cre-driver lines, whole cell recording, biocytin filling, NeuroLucida reconstruction, immunostaining and anterograde as well as retrograde tracing (Prönneke et al., 2015). We are part of the Petilla initiative on interneuron nomenclature and the Big Neuron initiative of the Allen Brain Institute.

How do neurons wire up to form a functional circuit? For us, the functional circuit that mediates the conscious perception of touch is at the core of our research. Which cells in which layers connected by how many synapses where on the dendritic tree need to integrate which number of EPSPs (excitatory post-synaptic potentials) and IPSPs (inhibitory post-synaptic potentials) in what temporal sequence to tell the animal that a whisker has touched an object in the outside world? Ideally, we would deflect a whisker of an awake



behaving mouse with threshold stimuli and the mouse has to report the presence of such stimuli by licking a water reward spout (Sachidhanandam et al., 2013). This input would drive an immediate early gene, such as c-Fos, to which a sensi-

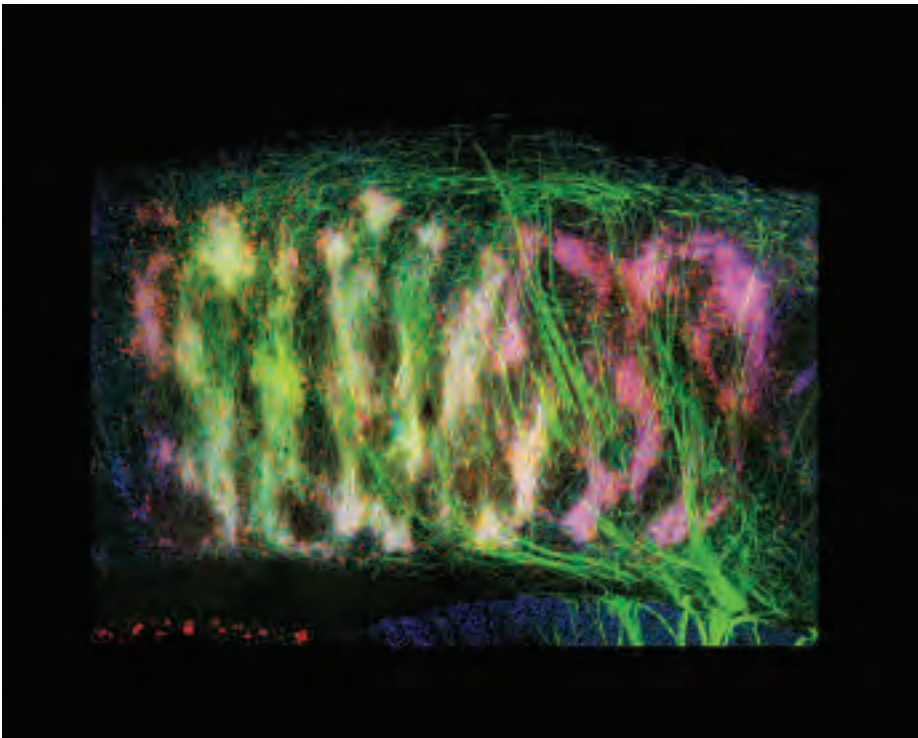
tive fluorescent reporter is coupled and we could image the cell assembly labelled in a Golgi-like manner, either in a two-photon set-up (that we are just about to start using), or after perfusion and histology, in a confocal laser scanning micro-

Figure 1 (left): Classification of three major neurochemically-defined GABAergic neuronal populations and their basic morphological and electrophysiological properties in the barrel cortex.

(A) Parcellation of neocortical GABAergic neurons based on molecular markers (BC, basket cell; AAC, axo-axonic cell; MC, Martinotti cells; GPC, GABAergic projection cell; BPC, bipolar-bitufted cell; NGFC, neurogliaform cell). (B) Low-magnification image of a PV-Cre section (PV, parvalbumin; green), which makes it clear that PV cells (that should be mostly basket cells in this stain; see Figure 2E) have a preferential localization in layers IV and Vb. (C) Low-magnification image of a SSTCre section (yellow), showing that SST cells (that should be mostly Martinotti cells in this stain; see Fig. 2F) have a preferential localization in layers V and VI. (D) Low-magnification image of a VIP-Cre section (VIP, vasoactive intestinal peptide; red), demonstrating that VIP cells (that should be mostly bipolar/bitufted cells in this stain; see Fig. 2G) have a preferential location in layer II/III. Roman numerals indicate cortical layers; scale bar, 200 μm . (E-G) Photoreconstructions, all in layer II/III, of a PV-expressing, fast-spiking basket cell (E), a somatostatin-expressing, adapting Martinotti cell (F), and a VIP-expressing irregular-spiking bitufted cell (G). Note the varicosities of the basket cell in L I, which are dendritic and not axonal. Also note that the axonal arbor of the Martinotti cell in L I is truncated due to restrictions of figure size but extends over more than 2 mm tangentially below the pia. (H-J) One of the typical action potential firing patterns upon strong depolarizing current injections via whole cell patch clamp electrodes during continuous fast-spiking (H), continuous adapting (I), and irregular-spiking (J).

Figure 2 (below): Lemniscal thalamic fibers in the primary somatosensory “barrel” cortex of the reeler mouse.

The ventral posteromedial nucleus of the thalamus was stereotactically injected with a GFP expressing viral vector (AAV2/6 eGFP). Thus, thalamocortical axons (TCAs) anterogradely transported GFP (green fibers). TCAs first run up to the pial surface, reverse, and form terminal fields at different (vertical) levels of the cortex. TdTomato is expressed under the layer IV-specific *Scnn1a* promoter. The red neurons represent ectopic layer IV neurons in the disorganized reeler cortex. Interestingly, the terminal fields of TCAs overlap with the ectopic clusters of layer IV neurons, indicating that the thalamus in the disorganized cortex still targets its native input compartment (i.e. layer IV neurons). Moreover, lemniscal synapses, visualized by immunostaining for vGluT2 (blue staining), are concentrated in these overlapping spots.



scope (where we are producing very large high-resolution-at-large-field-of-view images; Figure 2). Since this circuit visualization method is not established yet, we will do it the hard way: two-photon-targeted patch clamp recordings of single neurons of interest while the animals are receiving whisker stimuli. Let's see whether we can get it to work until end of 2017!

How does this all come about during development? Well, “adult” scientists often escape into “development” when they are scared about the

complexity of a fully grown brain because they hope development will present them with versions that can be understood more easily. What a big illusion! Basically, the molecular complexity and the fast pace of moment-to-moment changes is as formidable a task to dissect and understand as any other scientific question in the adult nervous system. But certainly a nice aspect of development is its in-build function, i.e. to build a functional adult nervous system. Thus, we started to work on reeler mutant mice which were thought to have

an inverted cortex due to a defect in reelin secretion by Cajal-Retzius cells (D'Arcangelo, 2014). However, we found that the cortex of reeler mice is completely scrambled and no layers are left. This is highly surprising, considering that (apart from the strong motor phenotype coming from the cerebellar hypoplasia) these animals survive well, get old, can learn, and are highly plastic (Pielecka-Fortuna et al., 2015). Moreover, cortical columns do form, thus implying that the local circuitry as well as the long-range connections are preserved (Wagener et al., 2016; Figure 2). How this massive plasticity is achieved during development is one of our main future questions.

Prof. Dr. Jochen Staiger

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Multielectrode recordings from auditory neurons in the brain of a small grasshopper

One of the major developments in the field of neurophysiology is the use of multielectrodes (or tetrodes, in case of four wires) to simultaneously monitor spiking activity of populations of neurons (Wise and Angell, 1975; O'Keefe and Recce, 1993). This is used to study fundamental aspects of the functional organization of the nervous system. Long-term multielectrode recordings have become routine in mammalian neurophysiology (Nicoletis et al., 1993; Welsh et al., 1995), and at present a large variety of experimental conditions are applied, which include *in vitro* preparations, such as cultures or brain slices (Gross et al., 1982; Potter, 2001), acute and chronic recordings in anesthetized animals (Ghazanfar and Nicoletis, 1997), long term recordings in behaving animals (Laubach et al., 2000), and even short term neurophysiological monitoring in human subjects (Kreiman et al., 2000). However, multielectrode recordings still remain a challenge in insects, owing to the smaller size of the nervous system. Intracel-

lular recordings with sharp electrodes are popular in insects, since they provide very detailed data on identified neurons. However, this technique is usually limited to one cell at a time, requires a restrained animal, and can typically only be stabilized for relatively short periods of time.

Grasshoppers have been used as a model system to study the neuronal basis of insect acoustic behaviour. Although auditory neurons have been described from intracellular recordings, the growing interest to study population activity of neurons has been satisfied so far with artificially combining data from different experiments (Meckenhäuser et al., 2014; Schöneich et al., 2015). We for the first time performed multielectrode recordings in the brain of a small grasshopper *Chorthippus biguttulus* (Linnaeus, 1758), using three 12 μm tungsten wires, combined in a multielectrode, to record from local brain neurons and from a population of auditory neurons entering the brain from the thorax. We tested 15 μm copper and 12 μm tungsten

wires and found that tungsten wires exhibited stable recordings with higher signal-to-noise ratio than copper wires.

We were able to separate up to five units ('unit' represents neurons) by using sorting algorithms. Due to the tight temporal coupling of auditory activity to the stimulus, spike collisions were frequent and collision analysis retrieved 10–15% of additional spikes. Physiological identification of units described from intracellular recordings was hard to achieve. Therefore we focused on comparing individual units. Recording the population activity of auditory neurons in one individual prevents interindividual and trial-to-trial variability, which otherwise reduce the validity of the analysis (Bhavsar et al., 2015). Using such multielectrodes, we were also able to generate singing responses by electrically stimulating different auditory neuropiles in the brain of grasshoppers.

Mit Bhavsar

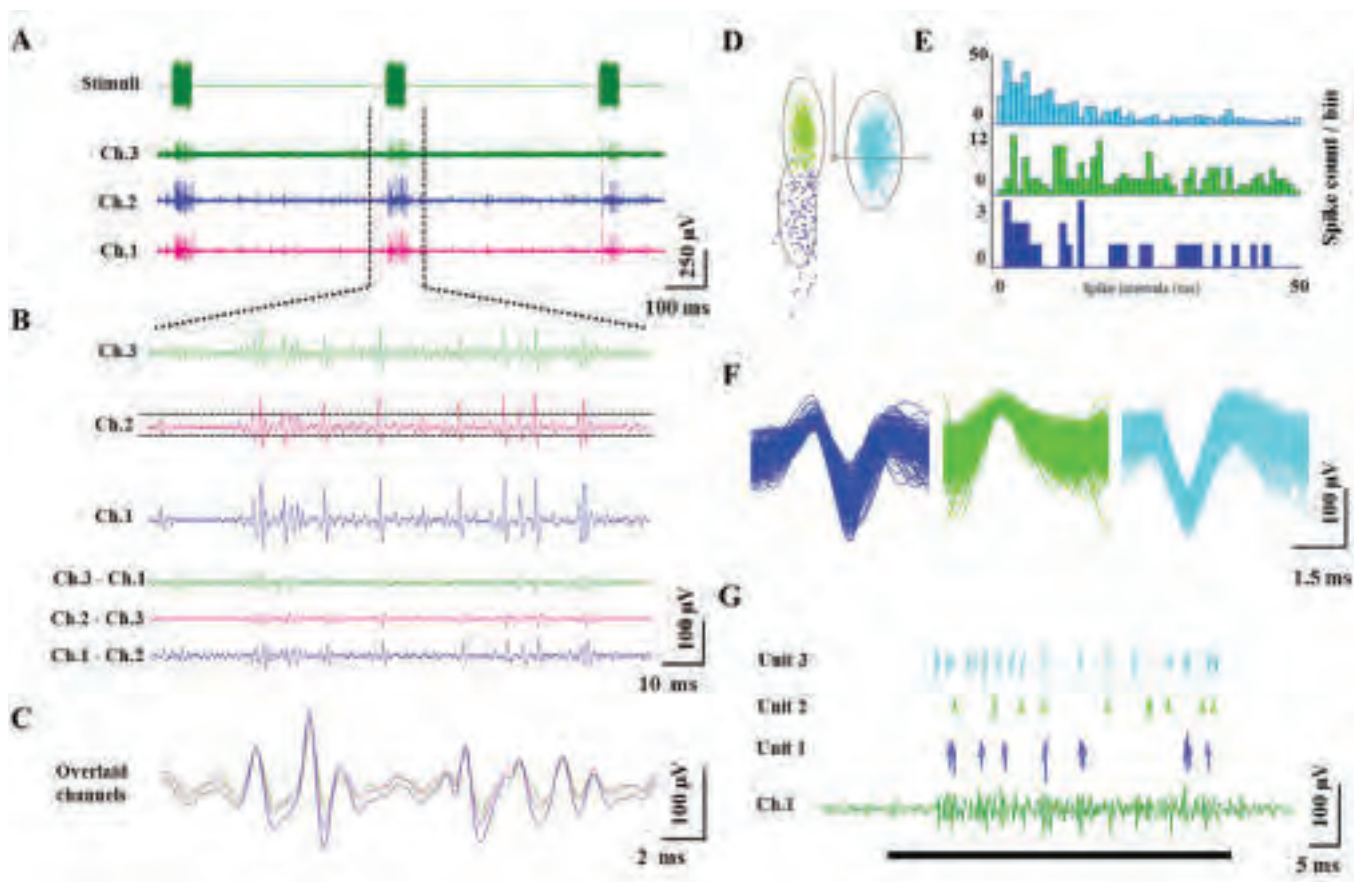


Figure: Spike sorting in multi-unit recordings of acoustically stimulated activity in ascending auditory interneurons.

(A) Response of ascending auditory neurons to acoustic stimuli, recorded via three different channels of a multielectrode. (B) Magnified version of channels shown in (A) and the result of subtracting the channels with extended scale.

The threshold for spike detection (shown as dotted lines in the middle part) was set as mean (\pm) 3 S.D.s during 10 s of recording without acoustic stimulation. (C) Superimposed recordings from the three channels to visualize the subtle differences between the signals. (D) The clustered units that emerge from principle component analysis are surrounded by 3.5-times Mahalanobis dis-

tance. (E) Interspike interval histograms for all spikes of each sorted unit. (F) Superimposed spikes of each sorted unit showing different spike shape and numbers (Unit 1: 517 spikes; Unit 2: 527 spikes; Unit 3: 1174 spikes). (G) Occurrence and waveforms of three sorted units extracted from channels of the multielectrode recording. Black line marks stimulus duration.



Göttingen scientists contribute to Parkinson's disease map

Parkinson's disease (PD) is the second most common neurodegenerative disease, and is characterized by the loss of neuronal cells from a region of the brain called *substantia nigra*. Currently, there is no cure for PD, and only symptomatic therapies are available. This is due to the great complexity of the disease, and our limited understanding of the molecular underpinnings leading to disease onset. To enable a comprehensive overview of the existing knowledge about this disease, the Center for Systems Biomedicine of the University of Luxembourg together with the Systems Biology Institute in Tokyo, developed PD map (<http://minerva.uni.lu/MapViewer/>). PD map is freely accessible and compiles literature-based information about molecular interactions and the identification of drug targets. PD map is developed in close collaboration with academia, industry and clinical scientists, and the team aims to expand our knowledge of PD with the participation of the scientific community.

In July last year, the PD map team hosted Prof. Tiago Outeiro, a world-expert on PD and other neurodegenerative disorders, and some of his team members from Göttingen and Lisbon, for a day and a half workshop. The main focus of the meeting was on alpha-synuclein (aSyn), a protein that significantly contributes to the disease, discussing in particular its post-translational modifications and subcellular localization. The meeting proved extremely useful, contributing to the continuous improvement of PD map, and the team is hopeful that this new platform will facilitate sharing of knowledge among the scientific community, thereby providing new avenues for further discoveries in the field.

From the right: Tiago Outeiro (1), Sandra Tenreiro (2), Laetitia Francelle (1), Peter Barbuti (3), Bruno Santos (3), Jonathan Arias (3), Raquel Pinho (1), Manuel Buttini (3), Tomás Fonseca (1), Lisa Smits (3), Maria Pavlou (3), Sarah Nicklas (3), Wiebke Wermheuer (3), Lars Geffers (3), Marek Ostaszewski (3), Stephan Gebel (3).

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Diana Fernandes Lázaro

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Nico Posnien

How to become an independent group leader



1. How did you become interested in science?

My grandfather influenced my research interest during my childhood. He always took me on hiking trips and he introduced me to physics, geology and biological phenomena. He is an example for someone extremely interested in science, but who could not pursue it in GDR times. Already in school, I was determined to study biology. I studied biology in Göttingen with emphasis on zoology and human genetics. Since I wanted to study molecular and organismal biology, I found the research on evolutionary developmental biology done in the Department of Developmental Biology, headed by Prof. Ernst Wimmer, very interesting. Therefore, I joined the group of Prof. Gregor Bucher from that department for my diploma and PhD studies.

2. How was your time as a PhD student in GGNB?

GGNB was not established when I started my PhD. The graduate school was formed when I was midway through my PhD. Although just started, the GGNB provided me with the opportunity to participate in many interesting methods courses. There were not many soft skills courses at that

time, but it was already providing some formal structure to interact. Especially the more controlled PhD supervision with regular committee meetings and retreats was really inspiring.

3. What is challenging about being a group leader and mentoring students?

I always enjoyed explaining to others and I always considered teaching to be an integral part of my work. I was involved in tutoring students as a "Nachhilfelehrer" (private tutor) during school time and supervised students during my diploma studies. The most challenging, but at the same time most interesting, aspect of being a mentor is that everyone is different. Sometimes it is difficult to judge what direction the mentoring should take. I always try to identify the strengths of each person to stir their development into this direction. On the other hand, I always try to motivate everyone to step out of their "comfort zone" to some extent, since this allows personal development. For group leaders there are also situations, such as deciding on authorship, deciding whether to wait longer for a publication or not, and other "political issues", which are actually more challenging than any mentoring aspect.

4. Since academic success is judged by publishing, what are the pressures of publishing as an independent researcher?

These days, publications in high impact journals are unfortunately the only reliable measure for funding agencies and job committees. However, I am not a big fan of high-impact journals since space is often very limited. In order to fully present all data leading to the final conclusions, I prefer to show all data in the main paper and not hide them in the supplement. I am a big fan of open access publishing, since this allows to communicate and share data also with non-scientists more easily. In terms of independence, I think that it is indeed necessary to demonstrate it via publications, since there are not many other ways to judge this. On the other hand, if it is possible to establish a fruitful collaboration with a former PhD or postdoc advisor, I would always go for it.

5. What is your advice for GGNB-PhD students considering a career in academia?

First, I would strongly advise students to choose a lab where they can do the work they love to do. GGNB offers a great opportunity to get out of your restricted project and get new insights. Thus, I'd recommend to take methods courses and join the retreats. The "soft skills" courses offered by the GGNB (project management, leadership, etc.) are definitely useful. It may not be relevant during the PhD itself, but you will profit from that later during your career. Besides publishing well, networking is really important these days. I can only encourage everyone to go to meetings, workshops, and also to organize your own meetings. Especially, late PhD students and postdocs should make use of the GGNB Career Service Unit run by Katrin Wodzicki to get information about non-academic jobs, too. If you have doubts about whether to stay in academia, or enter industry, or to take on administrative tasks, it is definitely worth to explore alternative options. Leaving academic life is not a failure! As long as you like what you do, it cannot be wrong!

6. What do you like to do in your spare time?

I spend most of my free time with my wife, my two kids, and friends. They provide a solid private environment that is really important, especially in times of throwbacks and doubt. For instance, I am sure that I would have suffered a bit more without family support, at times when important grant applications were rejected. I very much enjoy the lively and active Hardcore music scene with many concerts here in Göttingen. To satisfy my need to move from time to time, I go climbing and running.

Vinodh Ilangoan

Sreemukta Acharya

Homeland:
India

Lab during PhD:
Prof. Großhans

Current employer:
Dr. Sylvia Erhardt, ZMBH, Heidelberg



"I look back to my PhD life with great fondness, and I consider myself incredibly fortunate for that." Sreemukta's main goals during her doctorate were to become more independent, and to pursue her own project. She wanted to learn many laboratory techniques, as she considered herself as "not so experienced" in that area. During our time as a PhD student, as most of us know, there are not only happy, fruitful days but there will be obstacles, too. "One of the main aims of my project was not quite proceeding as quickly as expected. The key for me was to simultaneously have several projects in the beginning, and then narrowing down to the most promising aim in the final one and a half years." A personal obstacle for her was that she found it difficult to steer her project on her own. "As my boss would always have new ideas, it was often easier to just follow rather than take the lead. I overcame this over time by making it a point to think of new ideas for the project, and to discuss them with my boss, who was very open for such discussions."

She thinks it is important to gain independence in the project as quickly as you can. The boss should be a guide in the beginning, to provide a direction, but soon one needs to think independently and be able to hypothesize, design experiments and conduct them on one's own. Whenever designing an

experiment, one should also consider whether the question is important and relevant enough to justify the time and effort one has to invest. Another important thing she believes is that one should not be hesitant to take help from other laboratories who might be experts in a certain technique. This might end up saving a lot of time.

Is Sreemukta planning to have children? "Unfortunately, I do see it as a bit of a hindrance to my professional career, due to the financial uncertainty and lack of stability at one place. Moreover, since I am not a citizen of Germany or the EU, me staying in Germany is not so assured, which makes it difficult for me to plan for a family."

Stephanie Gröning

Anna Cypionka

Current position:
Advisor to the President

Current employer:
Physikalisch-Technische Bundesanstalt (The German National Metrology Institute)

City, country:
Braunschweig, Germany

Main tasks of current occupation:
Support the president of PTB in all his tasks, e.g. by collecting and filtering information, preparing memos on upcoming meetings, accompanying him on meetings and taking notes, preparing speeches, presentations and letters, drafting concepts for strategic interventions, and so on.

GGNB PhD programme:
IMPRS-PBCS

Graduation year:
2009

Your advice to current PhD students:

- Be clear about what kind of job you would like to do. What kind of tasks do you enjoy most? What kind of work environment is most fulfilling for you? Which of your skills do you like to use most? Do not limit yourself by thinking in terms of positions, find the jobs that best suits your personal priorities.
- Build your network long before you look for a job. It will help you ,not only in getting to know about open positions once you are searching, but it will also give you an insight on what kind of jobs exist and what it is like to



work in these jobs. Make sure to talk about the kind of job you want with the people in your network.

Beatriz Salas Vegue

Franziska Schmidt

How to narrow down your choices



Getting started as Science Manager

Do you want to advance science but don't mind leaving the lab? Can you imagine working on projects bridging research and administration? Do you enjoy organising scientific events? If yes, have you ever considered becoming a Science Manager?

From 2009 to 2013, I did my PhD at the Institute of Molecular Oncology at the University of Göttingen in the Döbelstein lab. During the second year of my PhD, I realised that what I enjoyed most was coordinating my experiments and communicating with scientists from all over the world. So I began asking myself if there are other options besides becoming a researcher in academia or in industry.

Since I wanted to gain more experience, I became actively involved in organising the 1st Women's Careers and Networks Symposium (WoCaNet). It brings together young scientists with successful

women of diverse professional backgrounds (e.g. academia, industry, politics), to benefit from their experiences and to discuss different career options and gender issues. The programme is organised by GGNB students and postdocs in Göttingen. As it was a rewarding and inspiring experience, I helped organising a further two of these events. Thereby, I gained skills in conference organisation, e.g. in organising the career fair and being responsible for public relations, which involved writing press releases and editing the website. Furthermore, I raised funds for the symposium, which included donations from academic and industrial partners. I purposefully selected tasks I was most interested in, or did not have previous experience in, to be able to grow.

After completing my PhD thesis, I continued working as a postdoc. During this time, I was very fortunate to get the opportunity to work part-time for two months at the GGNB Office when it was understaffed. This time gave me a deep insight into the procedures and management of a graduate school. I enjoyed working with the GGNB team a lot and gained valuable knowledge by talking to Katrin, Kirsten and Steffen from the GGNB Office.

Some months later, I started applying for jobs. Typical employers in science management are universities and non-university research organisations, such as the Max Planck Society and Helmholtz Association, but also research funding organisations, such as the German Research Foundation. As for jobs in "industry", there are many different fields of activity which comprise different tasks and responsibilities. Examples are: personal assistants to scientific directors of research institutes, coordinators of larger research projects or graduate schools, and professionals working in strategy boards of research institutions. Since May 2015, I have worked as Project Manager for the International PhD Program of the German Cancer Research Center (DKFZ) in Heidelberg.

Mostly, jobs in science management require a PhD, excellent organisational abilities, and time management skills, as you are working on different short- and long-term projects in parallel. For example, I do various advertising activities for the PhD programme, I support the organization of the bi-annual interviews, and I represent the PhD programme at international career fairs. Since you have to communicate with different parties and reconcile diverse interests, interpersonal (and often intercultural) skills and very good English and German language skills are desired. Many activities also depend on self-responsibility and self-initiative as well as service-orientation. Depending on the position, further skills are advantageous, such as experience in grant writing. In the end, what convinces an employer is a mixture of your educational background, experience, and motivation for to the job.

Tips: First, get involved in science management activities to find out if this is something for you! Organising an event is extremely helpful, since it is hands-on and rewarding, and you build a network for the future. Second, talk to people! Whatever career sounds interesting to you, talk to people and find out what this job is really like. As jobs in industry, which are not only in R&D, jobs in science management differ widely.

Train yourself! Theoretical knowledge will support your practical experience. I seized the chance to take courses, e.g. on project management, organised by the University Medical Center Göttingen. I am also very grateful for the comprehensive offer of GGNB courses, e.g. on media and PR for academia. Furthermore, have a look at the mentoring programme in science management (WeWiMento), organised by the University of Göttingen. And finally, get practical experience to make use of this knowledge.

Cindy Wechsler

Homeland:
Germany

Lab during PhD:
Prof. Tittmann

Current employer:
Pfizer Germany

After Cindy graduated, she started a postdoc in Freiburg (Lab Prof. Müller). "After 14 months of postdoc, I now finally made it into industry." Advising current PhD students, she says: "Make your project your own! Stay focused but do not miss out on life around you! These are the last three years in which you can work so freely! So do not forget to travel, to enjoy life and don't take everything too seriously!"

Cindy is currently working for Pfizer Germany in Freiburg in a position called "Manager Site Compliance". She does not think she gained the necessary skills for the position during her PhD. "I am very sorry to say so - and I have raised this issue before in GGNB Board Meetings and in front of the Advisory Board. I did not have the background and qualification I needed. I wanted to get into pharmaceutical industry, as chemist/biochemist with no background on Good Manufacturing Practice (GMP)." The GGNB has filled this gap in its curriculum in the meantime, and now offers a GMP course for interested students.

She tried very hard to get into a job but always "lost the battle" against people that had experience or courses in GMP. The only way she found was to gain knowledge in quality practice. Starting in April 2015, she performed



an advanced training with the GDCh as "Zertifizierter Qualitätsexperte GxP". "Most professors I know would say this is useless and I would be already educated enough, but this was not the case".

After finishing this course in August 2015, she suddenly got offers. Already before she finished all 4 modules, she had the experience to feel more confident talking about quality issues in interviews: "I spoke the same language, sharing one terminology so to say!"

So all she recommends is: "Try to get this kind of training during your PhD if you are interested in this field. Even if you want to become a group leader in this area, they will still ask you for GMP. If you try to get a job like I did (without lab - directly behind the desk in the office) then you really need some background OR you are very lucky!"

Olena Steshenko

Current position:
Coordinator of SFB 1102 (Collaborative Research Center) and Integrated Graduate College

Current employer:
University of Saarland

City, country:
Saarbrücken, Germany

Main tasks of current occupation:

- accounting, preparation of the financial and progress reports for the University and DFG (German Research Foundation)
- developing regulations, templates, scholarship contracts and further administrative documentation
- maintenance of online media platforms
- scientific and social event organisation (conferences, "culture nights", retreats, colloquiums, workshops, science slams)
- communication between the executive board, principal investigators, graduate students, university administration, and DFG
- taking care of international graduate students and visiting researchers

GGNB PhD programme:
IMPRS for Molecular Biology

Graduation year:
2013

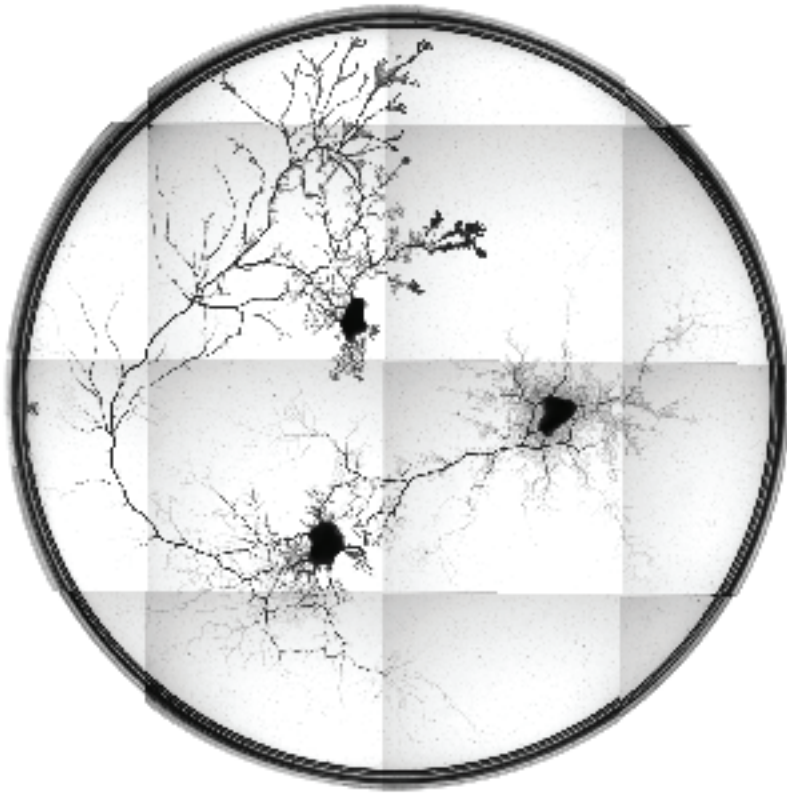


Your tip to current PhD students:

Your PhD, regardless of the topic you are currently dedicating your life to, gives you these invaluable skills: how to solve problems, overcome frustrations and deal/work/survive with high amount of stress. These are skills you can apply to any job out there. Don't be afraid to start over. Ask yourself: does your current occupation make you happy? Do you feel you are working to your full potential and are doing things you really enjoy? If yes, perfect. If not, it is time for a change.

Beatriz Salas Vegue

LabStruct – Abstracts from the lab

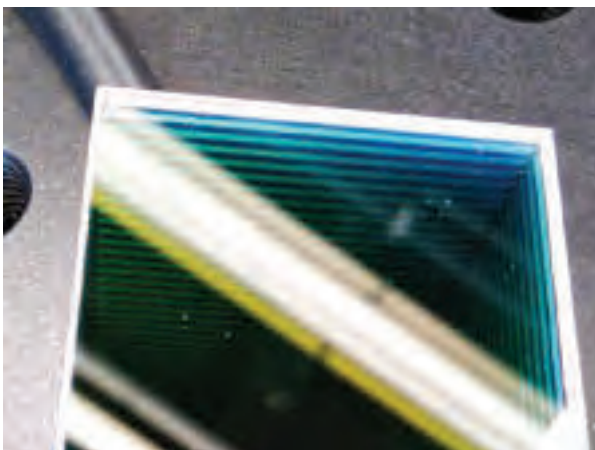
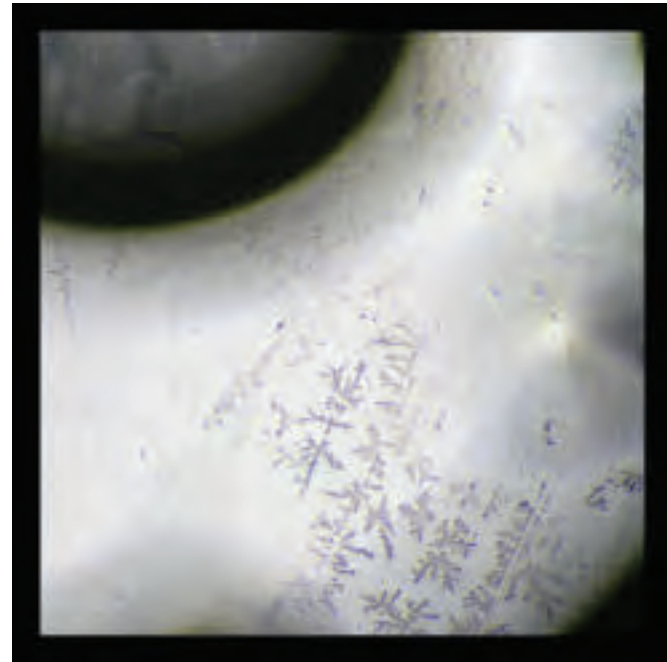


1. Felix Bäuerle

The veiny network you see is the slime-mold *Physarum polycephalum*, connecting three oat flakes that serve as food sources. It was cultured in a standard petri dish (~8cm diameter), and 16 microscopy images were crudely stitched together to form a whole image of the organism.

2. Laura Turco - "Art(i)fact"

This is a picture taken during an experiment. PBS crystalized by mistake on glass, and one air bubble in the liquid created the shadow effect.



3. Elena Polo

The photo shows the surface of a dichroic mirror with a reflection of the ceiling. The dichroic mirror serves as a wavelength filter and will selectively let light of only a small range of wavelength pass. The rectangular (green-colored) shapes in the depth of the mirror are alternating layers of optical coatings with different refractive indices. The interference between light reflected from different layers enhances selected wavelengths and quenches the others.

ἔγκεφαλος

en·ceph·a·lon

[en'sefələn]

*within the head*3rd biennial Neuroscience Symposium

Encephalon, the 3rd student organized biennial CNMPB symposium, was held on the November 3rd 2015 at the Max Planck Institute for Experimental Medicine in Göttingen. Seven renowned scientists from all over Europe and Israel discussed the latest developments in a diverse range of research themes in neuroscience, ranging from neurodegenerative disorders to anatomy and physiology of the neocortex and cell biology of the neuron. The speakers who were part of the conference were Prof. Simone Engelender, Dr. Srikanth Ramaswamy, Dr. Francisco Pan-Montojo, Prof. Kevan Martin, Prof. Matthijs Verhage, Prof. Inbal Israely, and Dr. Lucia Talamini.

One of the highlight talks was by Dr. Srikanth Ramaswamy, from the blue brain project team, who discussed the results from the first draft of the digital reconstruction of a microcircuit of the rat hind limb somatosensory cortex. 15 years of hard work led to a publication in the journal *Cell* in October 2015. The results seem to have silenced at least a few critics of this controversial project, who believe that the project promises far more than it can deliver. These reconstructions are only a first draft and many crucial phenomenological properties will be modeled into it eventually, including synaptic plasticity and glia. Putting together many such microcircuits in a super-computer, the project aims to digitally reconstruct the whole human brain.

Another interesting area of neuroscience was explored by Dr. Lucia Talamini, who described her real-life 'Inception' experiment to introduce mem-



ories into subjects while they are sleeping. For instance, she tries to make the subjects remember some words in a language they don't speak. This is done by predicting phases of sleep in real-time where memory consolidation is better, and playing audio stimuli of certain words.

funded the event, including lunch for registered participants, and a prize for the best poster to Nieves Mingo Moreno, including a travel grant to a neuroscience conference of her choice.

Besides the talks, there was plenty of time for participants to interact with the speakers, including the poster session. The CNMPB and GGNB



Neurizons2016 speak your mind.



When the red carpet paves the entrance to the MPI-bpc. When the who's-who of neuroscience shows up. When regular PhD students ooh and ahh and whip out their smartphones, desperately trying to catch a selfie with their favourite scientist. When multicolour fluorescent pictures, spike trains, circuit diagrams and bar charts flicker over the big screen. When flashes of unpublished results excite the audience. When nerdy science jokes cause broad laughter. When new co-operations emerge from coffee breaks. Then the 7th meeting of Neurizons takes place!

Neurizons was organized by students of the IMPRS Neuroscience programme. The Symposium of the European Neuroscience Institute (ENI) to celebrate their 15th anniversary preceded Neurizons, making these joint events a special four-day-conference lasting from May 31st to June 3rd.

The keynote address of Neurizons 2016 was given by Prof. Stuart Firestein from Columbia University. His laboratory works on the olfactory system, studying signal transduction and neuronal regeneration. Besides his scientific endeavours, he wants to make work and progress in science transparent to the public, too. He has published two books: "Ignorance: How it Drives Science", and "Failure: Why Science Is So Successful", which outline his philosophy of science.

Neurizons was organized into six sessions: Synaptic Research and Plasticity, Higher Brain Functions, Sensory and Motor Neuroscience,

Emerging Techniques, Glia and Neurodegeneration, and Systems Neuroscience. Therefore, the conference spanned a wide range of interests. Talks covered bestsellers like cortical microcircuits, Alzheimer's disease, sleep circuits, or human volition. Less hyped but no less interesting topics included magneto-sensation in birds, colour vision of the mantis shrimp, or how bacteria in the gut affect brain function. The session Emerging Techniques was a new concept, focusing on methodological advances. For example, improvements of optogenetic constructs make this technique (almost) ready for use in humans: incorporated in the retina of blind people, it could restore vision.

In addition to talks, Neurizons entertained with a lot of side events: one-on-one meetings with the speakers, young investigator talks, poster sessions, workshops, career talks, city tours, an exhibition, and an open panel discussion about the mind. The next Neurizons meeting will be held in 2018.

Georg Hafner



Learning beyond your lab

- Review of an Extended GGNB Methods Course -

GGNB offers a huge variety of courses for students to broaden their skill set. The courses range from short methods courses designed to introduce participants to new techniques to advanced courses that allow participants to gain hands on experience of specialized techniques. Beyond scientific courses, GGNB also offers a variety of soft-skills courses aimed at training doctoral students beyond the lab. These courses focus on networking, resume writing, job hunting, and related skills.

In addition, extensive 2-weeks courses offer students the opportunity to become proficient in more time-intensive techniques. The advanced

electrophysiology course, ELECTRAIN 2014, took place in the European Neuroscience Institute May 5th-16th 2014. This course gave 12 students (3 of them recruited through FENS, Federation of European Neuroscience Societies) the chance to participate in a very intensive theoretical and practical training in the basic concepts in electrophysiology.

The lectures were given not only by the leading neuroscientists from Göttingen, but also by scientists from top German institutions (LMU Munich, University of Cologne, and University Clinic Würzburg). Additionally, one lecturer represented a company producing equipment for electrophysi-

ology. This gave us insights into the broad range of aspects of neuroscience.

The very extensive theoretical programme was complemented by hands-on experience. Each participant could choose 2 out of 4 topics and do practical experiments with guidance of the experienced supervisors, followed by data analysis and presentations of the results in front of all course participants. Overall, ELECTRAIN was a very well designed course for everyone that wanted to learn basic concepts in electrophysiology.

Agata Witkowska

12th International PhD Student Symposium**HORIZONS in MOLECULAR BIOLOGY**14-17th September 2015, Göttingen, Germany

The Horizons in Molecular Biology symposium has been an annual tradition for the last 11 years, during which it has established a reputation for bringing together widely attractive and high-quality scientific talks from the various fields of molecular biology. Furthermore, being entirely organized by PhD students, and targeting PhD students and young scientists, it has developed into a vibrant, international, and youthful conference.

On September 14th-17th 2015, the tradition was once again carried forward, when the symposium hosted an impressive and diverse selection of speakers from around the world.

The conference, held at the Max Planck Institute for Biophysical Chemistry, was kicked off with the Horizons Career Fair, a one-day event packed with workshops, talks, and booths showcasing a variety of career examples that can come from a PhD in science, whether in academia, industry, or more creative paths.

Later that afternoon, the keynote speech of the conference was given by Tom Rapoport, who talked about his groundbreaking work in understanding how the endoplasmic reticulum forms its shapely structures.

Over the course of the next days, the conference continued to gather momentum with stimulating talks and events. Among the popular talks, to name a few, were those by Pamela Björkman, who talked about her lab's work in tailoring antibodies to target HIV, Adam Frost, who showed

how the 3D structure of ribosomes can shed light on their error correction mechanisms, and Axel Brunger, who talked about the structure of proteins in synapses.

Additionally, Alice Ting discussed her work at the interface between physics and chemistry to engineer labels for mapping the proteomes of living cells. Manuel Mayr demonstrated the bridge between basic science and the clinic when he showed his work in mining proteomes and transcriptomes for cardiovascular disease markers.

Scott Emr, Maya Schuldiner, and Michael Cox had messages beyond science to share with their students, about the importance of dedication, perseverance and vision, thinking outside the box, and the moral responsibility of scientists towards society.

Nobel laureate Martin Chalfie, who received the 2008 Nobel prize in Chemistry for applying GFP as a marker talked about his post-Nobel work in *C. elegans* genetics.

During the breaks, selected students pre-

sented their own research in the awarded student talks, and in the poster sessions what were held to the sophisticated backdrop of a selection of fine wines and cheeses. In the closing ceremony, a panel of judges chose three of the posters to receive prizes, the most talked about of which was a set of pipettes signed by the Nobel laureates Stefan Hell, Erwin Neher as well as Martin Chalfie.

The conference gave way to social evening, with speakers and participants joining us in exploring Göttingen's enthusiastic night life.

We look forward to welcoming you to another exciting conference next year! For updates and information about upcoming conferences follow us on twitter @HorizonsMolBio and facebook for continued updates.

Sara Osman



BEER & BATTLE IN BERLEPSCH

Be honest now. Do you want to see a dozen burly guys in medieval armour clash into one another, swinging clubs and axes just a few feet from your face? Do you want to drink mead from a bull's horn while you cheer them on? Do you want to see the owls and eagles of a falconer soar over your head to the tunes of a bagpipe? Do you want to shoot some arrows into a squash? What questions! Of course you want to!

All this and more can be had only half an hour's drive from Göttingen, in the medieval castle of Berlepsch. Several times a year, you can immerse yourself in the lifestyle of several hundred years ago, stroll across a market of medieval craftsmen, enjoy the fine medieval food, and join the song and dance.

Most excitingly, you can even watch actual tournaments on horseback and on foot. You might ask yourself - are there really people crazy enough to ride into each other with lances or hack away at

each other with swords today? Just for fun? Oh yes, there are! This is probably one of the most amazing things you can see in the vicinity of Göttingen - just look at the picture!

This is rapidly developing into an actual sport. The rules are simple: there are teams of equal number, when you make an opponent fall to the ground he is out, you are not allowed to lean on the fence of the fighting area for support, and you may not twist your opponent's helmet - anything else goes, basically, and the last team with a man standing wins! This is just as exciting as it sounds. You will soon find yourself cheering your favourite team as they progress through the tournament to win the favour of the lady of the castle.



You will forget for a while that you are using electron microscopes and mass spectrometers on a daily basis instead of spinning looms and hearthstones.

Go medieval!

Sven Truckenbrodt

Stage for Science

Maybe you already know the concept of 'Poetry Slam': creative writers, called 'slammers', bring their own piece of poetry or literature and present it on stage to fight for the favour of the audience. The audience then will vote whom they liked most - which makes the 'slam'-part of the event. Since 2006, those events also deal with scientific topics of various disciplines.

In 2006 in Darmstadt, Germany, the first Science Slam audience was hardly filling a seminar room - but it has grown drastically since then. In 2014, the first competition on a European level took place. Particularly in Germany, Science Slams became very popular. Almost every university is arranging Science Slams on a regular basis. The rules are quite simple:

1. You have 10 minutes. Not more.
2. You have to present parts of your own research. In any way you want.
3. You can use any accessories you like: from tools to 'volunteers'.

That's all. Admittedly, the concept of 'competition' or 'voting' might not sound very appealing, at first. Especially as facing constant competition can be one of the stressful things within your scientific career. Why, for God's sake, should you bother with this in your free time?

The answer is terrifyingly simple: it is fun. And it can be fascinating on many levels: you have the unique opportunity to convey your topic of research to the public, and excite people about it. It connects the rational scientific information with a pinch of entertainment on stage. And you inform the public about things happening in today's research - of which most people in the world are completely unaware.

Science Slams are much more than making a fool of yourself on stage. The audience usually appreciates a clear scientific message much more than plain jokes. But how do you come up with ideas and locations for slamming? Actually, it is not hard at all.

Having visited a couple of Science Slams in Berlin, I eventually thought of trying it myself. In summer 2014, the organizers of a symposium I attended in Istanbul decided to implement a Science Slam into their workshop programme - the very first Science Slam of Istanbul. So I took the opportunity to try a new way of presenting my PhD topic. I enjoyed not only the positive feedback, but also the different style of presentation. Explaining your research in a non-scientific way gives you a completely different view of your own everyday life. You think this does not work with your topic?



I encourage you to try it out: maybe your research is not as boring and frustrating as you might feel sometimes.

So, if you became curious about trying it yourself: there are many stages waiting for you all over Germany. Just check the website below and contact the organizers. But even if you are not convinced enough to slam yourself - I strongly suggest to go for watching one! It might not always change your vision of science, but for sure you will have an entertaining and interesting evening.

For more information check <http://www.scienceslam.de/>

Manuel Maidorn

Raise your Chances

The next step after PhD is often a big question, sometimes even when the thesis is already submitted. To continue a career in research, one must be aware of the fact that it is becoming increasingly difficult to find permanent positions in academia. A careful choice of postdoctoral position, particularly in renowned laboratories, will not only make you competent but also greatly support you in securing your career path. One way to raise your chances is getting an award in recognition of your PhD. It does not just make a nice line in your CV but usually comes with financial rewards as well.

An excellent example is the former GGNB student Stefan Schaffelhofer. After his thesis defence, he applied for the "DPZ-Förderpreis", an award from the German Primate Centre for outstanding contributions of young scientists in primate research. It comes with a 6-month scholarship (2100 € per month) to perform research at an institute of your choice, and an additional 1000 € in cash. In his own words:

"Receiving this competitive award was not only a great honour for me but opened doors to outstanding laboratories. Moreover, the excellent reputation of the DPZ award significantly

improved my chances of receiving other distinguished fellowships sponsoring the rest of my postdoc period."

Shortly after his PhD, Stefan started a postdoctoral position at Rockefeller University in New York.

Since the "DPZ-Förderpreis" is dedicated to primate research, only few people have the chance to receive it. But there are other such awards. To make your life a little easier, we have compiled a small (yet incomplete) list of potential awards for PhD theses below.

Michael Berger



DPZ Förderpreis

Field: Non-human primate research
Type of work: Thesis
Language: English or German

www.dpz.eu

KlarText! Klaus Tschira Award

Field: Math, Informatics, Science
Type of work: Thesis
Language: German

www.klaus-tschira-preis.info

Neurowind Award

Field: Neurology
Type of work: Publication
Language: not stated

www.neurowind.de

DGBMT / Klee Förderpreis

Field: Biomedical engineering
Type of work: Publication
Language: German

www.vde.com

European Eppendorf Award

Field: Molecular biomedicine
Type of work: Past research
Language: English

corporate.eppendorf.com

Global Eppendorf Award

Field: Cell/molecular neurobiology
Type of work: Past 3 years research
Language: English

corporate.eppendorf.com

Deutscher Studienpreis

Field: All
Type of work: Thesis
Language: German

www.koerber-stiftung.de

MTZ Award

Field: Medical systems biology
Type of work: Thesis
Language: German

www.systembiologie.de

SfN - Lindsey Award

Field: Behavioral neuroscience
Type of work: Thesis
Language: English

www.sfn.org

SfN - Nemko Award

Field: Cell/molecular neuroscience
Type of work: Thesis
Language: English

www.sfn.org

GBM / Bayer Award

Field: Molecular biology
Type of work: Thesis
Language: German

www.gbm-online.de

NWG - Schillig Award

Field: Neuroscience
Type of work: Publication
Language: not stated

nwg.glia.mdc-berlin.de



Frozen Lives Refugees around Göttingen

We are in the midst of a humanitarian crisis, yet the novelty and urgency of our 'life with the-refugees' has become part of the background noise. The noise is anything but static though. Germany received over a million refugees during the course of last year, averaging out at over sixty thousand refugees per state. Over a thousand have already settled in different locations in the city of Göttingen, and at least as many are expected to arrive before the end of March. The refugees, mostly from the Middle East, are staying in a variety of accommodations. Some, the better ones, were built for the purpose and provide small flats for families or small groups of people. Unused buildings, such as the former Voigtschule or the IWF, have also been adapted into living quarters. Other spaces have been created in neighbourhood sport centres, such as SC Hainberg, or in school gyms, like the Theodor-Heuss-Gymnasium. Here, the sport halls have been divided with curtains into dozens of small sections, allocated to families or groups of people. As the refugees often say: "it's all a question of luck."

If fate is benevolent, it might bring them to Göttingen, a generally liberal, educated city where xenophobia is largely dormant. Thousands have volunteered to help organize donations and distribute their contents, give medical and psychological attention to the refugees, teach them the German language and culture, or fill their waiting hours with activities. The civic effort is nothing less than astonishing and it fills one with hope that together we can transform this crisis into a model of integration, for all our sake. Several refugees have independently told me that Germans, in their charity, live by the Koran. A beautiful irony of this crazy world: while half of Europe equates Muslims with terrorists, refugees think that Europeans are the better Muslims.

The refugees, mostly people below 30, belong to all walks of life. Some speak fluent English and have university degrees, others do not know the Romanic alphabet. In fact, to bundle them under one term can be misleading. All of them, however, are equally keen to learn German

and to leave behind the asylum seeker's limbo. I teach German at SC Hainberg, now a 'transit' camp between the border and onward destinations in Germany. The first time I crossed its wire walls and faced the security guards, I felt as if I was entering a war zone. Here, time has stopped and days loop into each other, uncertainty being the common denominator. Take Monsieur Samir, with whom I have shaken hands and communicated each week. Today, three months after his arrival in this 'transit' camp, Monsieur Samir and others are being sent forth to other cities. Ayman, a young Syrian, commented: "I have not seen my family in four years. The friends I met here are now my family and tomorrow I will be separated from them to start again in another city." That day, the camp was awash with sadness, and we all felt the sucking power of this unwritten beast that we call future. And yet, Samir and the others are now physically safe, and that is surely a good start.

Far more integrated are Mahdi Aameary from Iraq and Bassel Alsaed from Syria, two young



men who are making the most of the Guest Programme of the University, which allows refugees to unofficially attend classes. We have talked about many things, from Palmira and Babylon to politics, passing through the Islamic State, and terrorist attacks. But we always go back to the same subject: education. Aameary, who was studying politics, talks about Baghdad: "The absence of safety, the continuously declining standard of living and economics, the state of despair and the feeling of hopelessness towards the unknown future, which has increased since ISIS." The young unattached ones, such as him, want their future to start - today. Many, in fact, have returned to Iraq or Iran after a few weeks in Germany, either because they came lured by myths or because they became restless. For those with families, waking up every morning knowing that their children are going to be safe is a wonderful contrast to their past. Take Loubna and Hussein, both Syrian Kurds, and their three children. In their small kitchen, the air smells of brand new happiness. But while the children started school as soon as they arrived,

and will soon speak German like German kids, the parents are struggling to fill their waking hours. For two months, they attended every available voluntary German class. Three months ago, they were accepted into an official A1 course. Now they discover they will not have further access to official courses because their fingerprints were taken in Hungary. Information changes from day to day, and the refugees surf the coming waves of uncertainty with astonishing bravery. Recently, Loubna told me she had unsuccessfully tried to speak with her mother in Aleppo. As I listened, I remembered the front-page news of that day: "Thousands are fleeing Aleppo." But when she left Syria, it was with the conviction that she would never see her mother again.

You might agree or disagree with bringing so many foreigners into the country in one stroke. It doesn't matter what any of us thinks now: they are here. Our actions are unlikely to influence how many come or stay. So, for the sake of our souls and theirs, we might as well be civic. The real xe-

nophobia is not in the head but in the gut and, let's not fool ourselves, it is in all of us. It is up to us to prevent it by being open and not getting blinded by nationalist voices trying to nourish our fear. The Middle East's Renaissance is long overdue and, maybe, we can be a small part of that hope.

Livia de Hoz

Livia de Hoz has been teaching German at a basic level in SC Hainberg's Refugee Camp one evening a week since November 2015. She is also a story collector for The Safe Place (thesafeplace4.blogspot.de, <http://www.facebook.com/thesafeplace4>).

Photo: Mahdi Aameary teaching a class of refugees

GGNB Excursion

Weimar and Buchenwald

The cultural excursion is one of GGNB's institutions. After a few years of pause, it has been revived with a trip to two sites that contrast the brightest and darkest periods of German history: Weimar, the capital city of German culture, and the nearby concentration camp Buchenwald.

Weimar was our first stop, the hotspot of Germany's classical cultural period. You would be hard pressed to find another city anywhere in the world with a higher density of famous poets, composers,

scientists, and political reformers. Here, Goethe and Schiller wrote, Franz Liszt and Richard Wagner composed, Carl Zeiss developed his microscopes, and duchess Anna Amalia instituted a society which became the model for our modern state.

Strolling through Weimar's vast public parks and past the homes of figures such as Schiller and Goethe, you can still feel the vibrancy of this period. After a city tour that led us past all these historic sites, we enjoyed the atmosphere of Weimar

with our fellow GGNB students, before moving on to the next

We continued our trip with a darker part of German history, the concentration camp at nearby Buchenwald. Weimar, for all its history of enlightenment, fell under the influence of the Nazis as one of the first cities in Germany. Later, it also became part of the Nazi's machinery to exterminate anyone who opposed them. It was chilling to see how the guards in Buchenwald and the better off prisoners the Nazi's kept as hostages lived well enough and enjoyed animal parks, in view of the abysmal prisoner camps where the Nazi's victims had to fear for their life from exposure to the elements, hunger, and disease every day. But this is part of Germany's history just as the poems of Goethe and Schiller and should not be kept hidden. While we cannot call this part of the trip enjoyable, it was certainly enlightening as well.

The next GGNB Excursion is going to lead us to the Wartburg and Eisenach, two sites that also feature prominently in Germany's and Europe's history. This is where Martin Luther translated the Bible from Latin into the common language of the people of Germany for the very first time, allowing everyone to read the Scripture for themselves. This sparked a cultural and political revolution that still influences us today. Come join us this time to enjoy these beautiful historic sites!

Sven Truckenbrodt



Call for Editors

To continue this newsletter in the future, we need students from all programmes of the GGNB to help organise contributions and steer the direction in which the GGNB Times should develop. This is a student organized newsletter, and it needs your effort! From writing to editing, proof-reading to design, photography to interviews - there are a lot of jobs to be done. So if you want to gain experience in editorial and journalistic work, you are more than welcome to join the editorial team!

Call for Contributions

Without your contributions, there could not be a GGNB Times. So if you have anything interesting to report from your programmes, your PhD Thesis, an excursion, an off-campus event, or anything else of interest to your fellow students - write in with your suggestion! All contributions are welcome and will be evaluated by the editorial team for inclusion in the next edition of the newsletter.

Call for Feedback

This is the 1st edition of the GGNB Times. Accordingly, it is not going to be perfect. We always welcome your feedback for improving the newsletter in the upcoming editions. You can tell us what you liked and want to read more of, as well as what you missed and want to read in the next edition. To make our newsletter more interactive, we would also be happy to include "letters to the editors" in our next edition, in which we can discuss developments in our graduate school.

all correspondence to: ggnbnews@gwdg.de

PI Blog

Dr. Marion Silies



It has now been exactly one year since I have started my own lab at the ENI. When I think about this first year, I have had tons of fun, I have felt challenged and sometimes, I have been terrified.

Let me start by talking about the fun. First of all, I feel like I am in an extremely privileged position and I am grateful for that. There are many talented people in academia who are not lucky enough to get a faculty position. I have always enjoyed working at the bench, but one thing I struggled with, as I became more experienced as a scientist, was that I inevitably became more specialized. There usually is one particular problem to focus all your energy on and you keep zooming in ever closer. More than once, I made discoveries that I would have liked to follow up but never had the time for. Now that I am leading my own group, I can allow my perspective to widen again and study various aspects of the topic that I find fascinating. I realize that the particular projects that people work on cannot be precisely defined from start to finish and I enjoy to see what kind of people are interested in the work I am doing on visual processing and what aspects my students themselves become excited about.

At the same time, setting up a lab can be challenging and even terrifying. The one thing that everyone warns you about is that the beginning is slow. Despite all the warnings I was still surprised how slow everything was. It takes time to order equipment, to build a team, to set up assays and experiments, and to teach. Our previous careers as PhD students and postdocs don't necessarily prepare us for the logistical and management challenges ahead. As a young group leader, every day is an adventure. And while you are busy doing things that you would have never imagined could take all day, the rest of the world keeps moving forward. It is hard to keep your calm and be patient sometimes.

That being said, for me the fun is clearly outweighing the challenging aspects. My lab studies the molecular and circuit mechanisms that underlie motion computations in the visual system. Göttingen provides the right combination of experimental and theoretical neuroscience, an excellent sensory processing community and talented and well-trained students who are interested in doing basic research in neuroscience. I am looking forward to the years ahead!

PhD Blog

Olga Babaev

"I already published two papers, but someone else always wrote it for me. OMG - how do I start writing?!" This appeared on my screen after I opened facebook. After I choked on my envy and mentally consoled myself (she's doing immunology, everyone knows it's easier to publish in immunology, right...?), I had to admit I also felt some sympathy towards her, as writing my first paper was a stressful experience for me as well.

It all started with my supervisor deciding that it's time to publish our work and that I should try writing it by myself. At first, I was very excited picturing my published manuscript - mostly my name as a first author, preferably on the cover of a high impact journal. However, sitting in front of a blank document, I realized that my name is the only thing I was able to write. Should I start with the introduction? How many figures should I include? And in which order? Luckily, I was able to get valuable guidance from various sources, including a GGNB course on scientific communication and writing. This is what I would encourage anyone in the same situation to do: get guidance - from your supervisor, from the GGNB, from professional books and websites, or colleagues who are more advanced in their career.

Looking back, this is the most valuable advice I received: before attempting to write the first sentence, decide which message you want to get across. This message was the guiding light in my writing process - I emphasized it in the abstract, presented it in the introduction, and built the discussion around it; and I arranged my figures in a logical sequence to support it. By defining a message, I was able to make my paper clear and consistent - or in other words: easy and fun to read.

While trying to formulate a bottom line of more than two years of research, I came across two problems. The first was a technical one - after endless experiments, it can be difficult to fit all data into a consistent narrative. I had to communicate a clear message, so I had to postulate clear questions first.

The second problem was psychological. I was so focused on getting my experiments done that I had trouble to transition into the right mindset for writing. Doing experiments day in day out is one thing, but now I had to sell my results. I had to convince myself and my audience that my research had value, in order to join the club of scientific authors. And as Woody Allen once said: "I'd never join a club that would allow a person like me to become a member."

I decided to initially focus on the first problem. To start, I made a list of all my data and tried

to identify the main results. The trick that helped me is to arrange my data into a pyramid - I placed the supporting experiments at the bottom and the conclusive experiments at the top. These "top" experiments addressed more than one question, so I chose the one that I believed was most important, scientifically, and also the one I felt most excited to be able to answer. The answer became the main message of my paper.

Organizing my data made me realize that I do have a meaningful story to tell, which gave me a great boost of confidence. All I had to do now is to convey this story, as well as my excitement, to the readers. With lots of help from my supervisor, I managed to start writing my first paper!



Adjusting to cultural differences in science

When you first move to a foreign country, you arrive with a overflowing bag and a heart full of expectations, likely based on biased stereotypes. It is natural — primarily as the definition of ‘normal’ differs globally. We are all used to our own language, food, lifestyle, and most importantly, work culture. The role of hierarchy, number of working hours or approach to work related problems may differ largely across cultures. So, newcomers enter a foreign country with a huge list of questions on their mind. What level of formality does the boss expect? How strongly can I put forth my opinion in a meeting? What kind of jokes can my colleagues be sensitive to? It is hard to imagine, but the answers to these questions differ drastically, depending on the cultural backgrounds of the people involved. I am sure many of you may also have experienced some embarrassing situations while adjusting to a new place.

The scientific community, especially, relies on good communication skills of researchers to spread

their work globally. International graduate programs, collaborative research projects and multinational companies break the barriers of borders and bring together a mix of cultures. We tend to assume that having a common ground of science is enough to understand each other, irrespective of our backgrounds. In reality, globalization brings the world closer, but fortunately/unfortunately we all carry our unique cultural baggage. Thus, apart from comical misunderstandings and day-to-day goof-ups, transitioning into a multi-cultural work environment can be a serious issue for some. How does it work if either party is lost concerning each other’s expectations during such encounters?

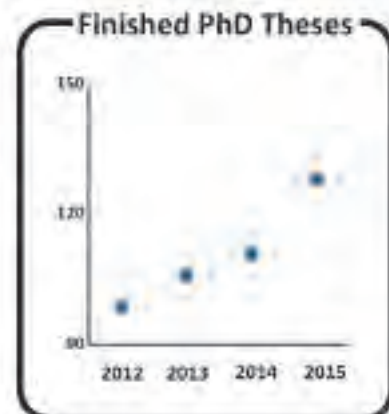
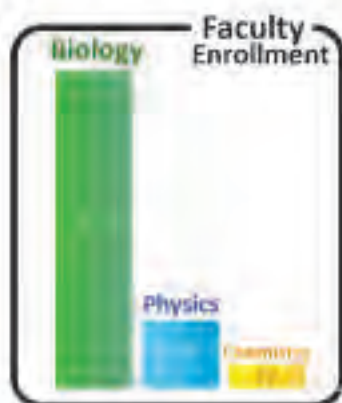
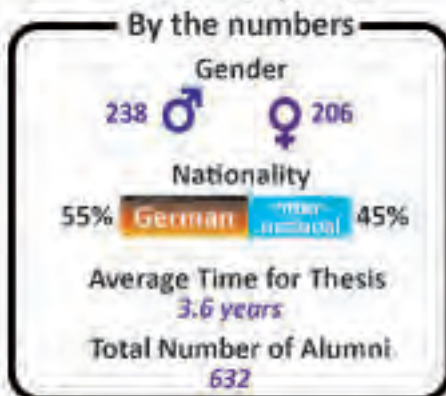
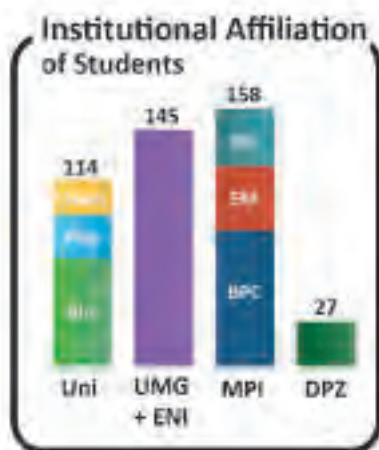
The good news is that we are practically the best equipped set of people to handle these issues! As scientists, we are curious and open minded; essential qualities for intercultural communication. An important first step is to expect and accept these differences. Respecting the possibly diametrically opposite customs and making

minor adjustments to accommodate those helps strengthen cross-cultural relationships. Specialized courses in intercultural communication (also offered by GGNB) provide additional guidance to work across diverse cultures. The key is to understand - as Desmond Morris states perfectly for the battle of sexes - that we are ‘different but equal’. The right attitude can make working in a multi-cultural environment an enjoyable and valuable learning experience; professionally and personally.

Meenakshi Prabhune

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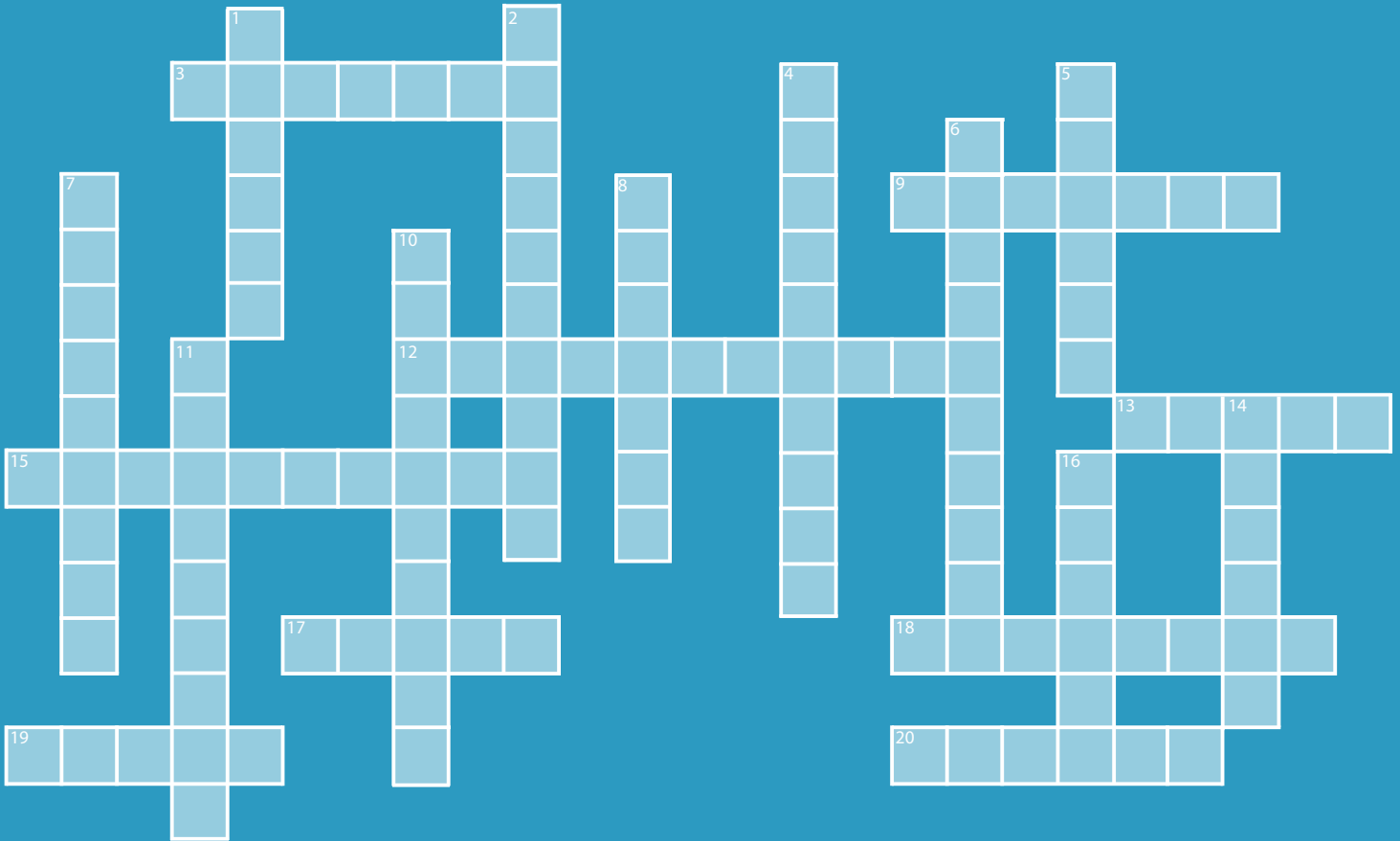
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Crossword (page 24): Nidhi Subhashini

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GGNB Crossword Times



ACROSS

- 3 European Mission of Comet science
- 9 "A universe from _____"
- 12 The new antibiotic
- 13 There exists an invisibility _____ to make things unseeable
- 15 Animal with spine
- 17 Number of phases of solid carbon
- 18 Who discovered DNA?
- 19 Anomalous liquid of life
- 20 Building block of Nervous system

DOWN

- 1 Gift can also mean _____
- 2 Recently discovered planet that is 11 times more massive than Jupiter
- 4 Outcome of the Manhattan Project
- 5 Famous chemistry Professor of Göttingen University
- 6 Newest relative of humans
- 7 Colour of light always depends on
- 8 Parody of Nobel Prizes are _____ prizes
- 10 Theorem for right angled triangles
- 11 City of Science
- 14 Dephlogisticated Air
- 16 Highly debated procaryotic immune system