



Newsletter 45

Schweizerische Gesellschaft für Versuchstierkunde
Société Suisse pour l'Etude des Animaux de Laboratoire
Swiss Laboratory Animal Science Association
sgv.org

July 2013

SGV 2013 Meeting



Lausanne, vue du CHUV

CHUV Lausanne, November 19th & 20th

Program pages 4 - 5

register now ltk.uzh.ch/de/dyn_output.html?content.void=2218 or sgv.org

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Word of the President

Dear SGV members, Dear Colleagues,

2013 has been and still is a very hectic and passionate year for SGV. Even if the Association enters its second quarter of a century, demonstrating the maturity of a well established institution, it shows the motivation of a youngster. We have launched the Swiss Animal Welfare Officer Network. We have awarded the first 25 Year SGV Grant, and SGV brings in November during its annual meeting its contribution to the current debate in political circles of the implementation of the 3Rs.

During the Spring, the SGV board has awarded the 25 Year SGV Jubilee grant to Dr. Arnaud Tourvieille for his project on long lasting delivery systems of opioids. More details will be given during our General Assembly on November 19 in Lausanne during our annual meeting. Please come and attend!

Speaking of our annual meeting to be held in Lausanne on November 19 and 20, 2013, you will discover its program inside the newsletter. Again, I can only recommend to attend the speeches from scientists coming from Switzerland, Europe and the USA. I may attract also your attention to the second day which is dedicated to the 3Rs. As you may know, the Federal Council has to answer the question raised by the National Assembly Committee for Science, Education and Culture on the future of the 3R Research Foundation Switzerland and on the implementation of alternative methods to animal experimentation

(Postulat 12.3660, www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20123660, www.parlament.ch/f/suche/pages/geschaefte.aspx?gesch_id=20123660). In addition to presentations on currently running 3R projects we will give you a short overview of new developments of the 3R in Switzerland in which you will be able to participate in the near future. Again come to be informed on the 3Rs, a topic of concern for all parties involved in animal experimentation.

Finally I recommend to get to the BVET / OVF website on the new 2012 statistics on animal experimentation. Read and play with the interactive section. Inform your families, friends and others, speak around you about these statistics. They are available for transparency and objective discussion on the highly debatable subject of use of Animals in Science.

I wish you a good time to read our news and a sunny and relaxing summer.

See you in Lausanne in November.

Lausanne, July 2013

Marcel Gyger
President of the SGV

SGV 2013 meeting November 19th & 20th, CHUV, Lausanne

Tuesday morning, November 19th, 2013		
<i>Chronobiology</i>		
09:00	WELCOME	SGV President
		<i>Chairpersons: M. Deurinck, M. Gyger</i>
09:10	<u>Plenary Lecture</u>	U. Schibler
10:10	The daily rhythms of genes, cells, and organs.	(University of Geneva, CH)
10:10	The Light-at-night effect in animal facilities	R. T. Dauchy
10:45		(University of Tulane, USA)
COFFEE BREAK- INDUSTRIAL EXHIBITION		
<i>Data validity: A question of timing?</i>		<i>Chairpersons:</i>
11:15	Glucocorticoid hormone oscillations	T. Dickmeis
11:50		(Karlsruhe Institute of Technology, D)
11:50	The circadian clock and immunity (effect on toll-like	A. Arjona
12:25	receptor 9 mediated immunity)	(University of Yale, USA; Thomson Reuters, E)
LUNCH- INDUSTRIAL EXHIBITION		
Tuesday afternoon, November 19th, 2013		
		<i>Chairpersons:</i>
13:55	Time matters: Pathological effects of social defeat are	Stefan O Reber
14:30	dependent on the time of day.	(University of Regensburg, D)
14:30	Is it the good time to give a drug to my animal?	G. Carey
15:05	Meal-feeding rodents and toxicology research	(University of New Hampshire, USA)
	(chronopharmacology)	
15:05	SGV AWARDS 2013	SGV and Awardee lecture
15:50		
15:50	COFFEE BREAK- INDUSTRIAL EXHIBITION	
16:20		
<i>Does animal Genetic Background affects my research?</i>		<i>Chairpersons:</i>
16:20	Genomic differences between Cynomolgus monkeys of	O. Grenet
16:55	different origin	(Novartis, CH)
16:55	Characterization of genetic background effects in mice	B. Witham
17:30		(Jackson Laboratories; USA)

This course is accredited as continuing education in Switzerland for experimenters and study directors in animal experimentation.

SGV General Assembly at 18:00
Gala Dinner at 20:00

SGV 2013 meeting November 19th & 20th, CHUV, Lausanne

Wednesday morning, November 20th, 2013

	Replacement: in silico methods	Chairpersons:
09:00 09:05	Word of the president concerning the 3Rs in LAS	M. Gyger
9:05 9:20	The role of the CRUS in the promotion of the 3Rs	M. Stauffacher (Rectors' Conference of the Swiss Universities, CRUS)
09:20 10:10	The Blue Brain Project	S. Hill (Swiss Federal Institute of Technology (EPFL, CH))
10:10 11:00	The Virtual Liver	A. Henney (The German Virtual Liver Network, D)

COFFEE BREAK- INDUSTRIAL EXHIBITION

	Refine	Chairpersons:
11:30 12:00	Refinement benefits animal welfare and quality of science	J. van Luijk (Radboud University Nijmegen, NL)
12:00 12:30	3Rs literature research	S. Vullioud-Marcacci (EPFL, CH)

1h30 LUNCH- INDUSTRIAL EXHIBITION

Wednesday afternoon, November 20th, 2013

	Reduce	Chairpersons:
14:00 14:30	The need to refine the notion of reduction	A. Kornerup Hansen (Royal vet and agricultural University, DK)
14:30 15:00	How low can I go in reducing the number of animals: power calculation	P. Presi, M. Reist (Sanisys, CH)
15:00 15:30	Power failure: why small sample size undermines the reliability of neuroscience	E. Robinson (University of Bristol, UK)

COFFEE BREAK- INDUSTRIAL EXHIBITION

		Chairpersons:
16:00 16:40	3Rs achievement in UK (title to be modified)	V. Robinson (NC3R, UK)
16:40 17:40	- research in 3Rs (20 minutes) - 3R education programs (20 minutes) - communication about the 3Rs (20 minutes)	3R Foundation & the 3R Swiss Network

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SGV 25 Years Fund – first project granted

The Swiss Laboratory Animal Science Association created last year in occasion of its 25 anniversary the « SGV 25 years » fund with the aim of financially support projects related to the promotion of laboratory animal science, animal welfare, and ethics in animal experimentation.

The first call for application was launched at the end of 2012 and at the first deadline of January 31st 2013 three grant requests were submitted to the SGV Board.

After a careful review of the applications the SGV board decided to fund the application of Arnaud Tourvieille from HumanVet in Lausanne entitled “Sustained release analgesic formulation to enhance pain management treatment in laboratory animals”.

Despite that the 3Rs concept is integrated since a few decades in the legislation of many countries worldwide there are still a number of open questions regarding pain management in rodents used for animal experimentations. A particular problem is that often, empirical values are used to determine the dosage necessary, but without considering the real effective dosages and the frequency of administration. The consequence is that the use of analgesics for postoperative care is in some cases insufficient, as shown by a study from Stokes, Flecknell and Richardson in 2009. Therefore it is important to increase the

knowledge on analgesics’ pharmacology on rodents and develop dedicated analgesic products.

Arnaud Tourvieille in collaboration with the research group of Margarete Arras at the University Hospital in Zurich is developing a sustained release analgesic formulation to enhance pain management treatment of laboratory animals. The aim of the project is to explore technologies which are currently used for sustained release of compounds in the human pharmaceutical industry, and combine them with analgesics (e.g. Buprenorphine) which are commonly in laboratory animal postoperative care. The first objective of the project is to find a formulation with an effective pain management treatment for a 3 days period. The efficacy and safety will be monitored by determining the analgesic concentration in plasma, by behavioural analysis and histological studies.

The development of standardized and dedicated analgesic treatments for rodents is essential to increase the well-being of the animals during experimentation and is an important element of the refinement part of the 3Rs concept elaborated by Russell and Burch which aims at the alleviation or minimization of pain and distress of the animals.

Paolo Cinelli

Initiation of a Swiss wide Animal Welfare Officer (AWO) Network

At our last SGV General Assembly in November 2012 in Zürich we have decided to initiate and support a Swiss wide AWO network. This network should enable a better exchange between the Swiss AWO community especially as in most institutions this function is only staffed by a single person. The first meeting was held on May 27th at the SCNAT (Swiss Academy of Sciences) in Bern and fortunately from 25 requested colleagues 21 have participated.

In general, it was agreed to have the meeting twice a year. The expectations on this network are the better alignment of regulations and guidelines e.g. handling of new forms M and GVT datasheets as well as exchange of information and experience. In addition, we discussed how to better implement the 3R's in academic institutions as the Pharma Industry has already many activities in this respect, e.g. an annual 3R competition. One possibility includes the strengthening of the AWO function. So far, the appointment of an animal welfare officer is only a recommendation and voluntary for institutions performing animal experiments. Strengthening of this function may be achieved through a change in the legislation by making an AWO legally required and define his/her responsibilities.

The next meeting is foreseen for October this year again in Bern. Max Müller, AWO and Head of Experimental Animal Center University of Bern, has very kindly offered to host the participants.

We are all very much looking forward to a fruitful collaboration.

PD Dr. Birgit Ledermann

Board member of the Swiss Laboratory Animal Science Association and AWO Novartis Pharma Research Switzerland

Laboratory Animals: publishing and subscriber pricing information



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28 June 2013

To: the subscribers of the journal *Laboratory Animals of Laboratory Animal Science Associations*:
FELASA, AFSTAL, ESLAV, GV-Solas, ILAF, LASA, LAVA, NVP, SECAL, SGV, SPCAL

Topic: Journal *Laboratory Animals*: publishing and subscriber pricing information

We thought it would be a good idea to give you an update on the *Laboratory Animals* Journal with regards to the current position on publishing and subscriber pricing information.

In November 2012, Laboratory Animals Ltd. (LAL) had to change publisher for the journal *Laboratory Animals*, since RSM press had decided to sell the production of all their journals to SAGE Publishing. Our first priority has been the continuity in publishing the journal. The January 2013 issue was published with a short delay only. The July issue was printed ahead of schedule, so that it could be presented at the FELASA congress in Barcelona in June.

There is good news that LAL has decided that publications from FELASA Working Group reports will have free access immediately as from the publication date, and this has already been effectuated in the July issue of *Laboratory Animals*. We thank our editor-in-chief, Prof. Dr. Beat Riederer, and Sage Publishing for their hard work since the transfer from RSM Press to SAGE Publishing.

To assist with future planning for the journal *Laboratory Animals*, a questionnaire was sent to Member Associations to find out about their membership structures and journal subscriptions, members' preferences on paper or on-line versions, the importance of PubMed and impact factor. We thank the 7 Associations that have responded so far. Not all of the responses have been received yet, but preliminary results from survey responses to date show that staying in Pub Med is considered very important, and that the height of the impact factor is considered of less importance. Some think an online only version is preferable. But because an on-line only version has the possible risk of losing some the current advertisers, this may pose a threat to the income of the journal, and in turn for the profit that is used for charity purposes. SAGE will calculate future projections on advertising income of hard copy versus an on-line version only, which will then be discussed in the Council of Management [CoM] meeting of LAL, together with the total outcome of the questionnaire.

It is important to emphasize that the journal *Laboratory Animals* is currently being discounted by 80% to Association Members. To ensure the widest circulation of the journal, which is the main route to promote high standards of animal science and welfare, LAL would like all full members of Subscribing Associations to receive the journal. However, this can be negotiated with individual Associations. In future, LAL and Sage intend to draw up a contract with each individual Association to make the relationship between LAL and the Associations clearer for all concerned.

Finally and most importantly, we know there are concerns on the relatively high increase in membership fee for the journal *Laboratory Animals* in 2012 that was imposed by RSM Press, which was without the consent of LAL and this is, therefore, considered unacceptable. A decision was taken at the LAL AGM and CoM meeting in Barcelona in June 2013, in the presence of a representative from SAGE Publishing. In 2012, the CoM had agreed that a price increase of 5% was acceptable and reasonable, but RSM Press had charged a lot more. Therefore, it has now been decided that the current price level will be based on the 2011 member price (£ 8.75 per issue) + 5% = £ 9.19 per issue. This price is going to be charged to the Associations for 2012, 2013 and 2014. Since some Associations had already paid the increased price as determined by RSM for 2012, LAL is going to look at ways to repay the difference to the Associations and this will be advised once a decision has been reached.

We hope we have given you the necessary background information for the subscription to the journal *Laboratory Animals*. In case you haven't sent us your completed questionnaire, please do as soon as possible.

If you have any further questions, please send them to:

Penny, LAL Secretariat at lalaccounts@hushmail.com

With best regards and thank you for your continued support.

Merel Ritskes-Hoitinga
Chair of the Executive Committee of LAL

Notes from the editor of *Laboratory Animals*

Laboratory Animals is the official Journal of the SGV. So every member should receive a hardcopy of the Journal and should have access to the on-line version. In a recent editorial, I have already outlined several changes. The Journal is now published by SAGE Publishing group. Members of the editorial board have become section editors, which allows better recognition of their expertise and a more efficient peer review process. We still need section editors to reduce the working load and help to speed up the review process. The scope of the Journal remains unchanged, publishing a diverse range of papers dealing with more optimal use of animals and their management in biomedical research, and to promote high quality education and training in laboratory animal science. The journal particularly welcomes manuscripts reporting Replacement, Reduction and Refinement, collectively termed the "3Rs", and specifically focuses on those findings that either refine protocols involving animal models or improve experimental designs.

SAGE Publications Ltd. SAGE is a world-leading independent academic and professional publisher of textbooks and over 700 Journals. About 165 Journals are in Science, Technology and Medicine. They have a great expertise not only in publishing but also in promoting Journals. For authors of manuscripts, the

submissions remains unchanged, via 'Manuscript Central'. Most authors have probably not realized that the publisher has changed. SAGE has done a great effort to make the transition as smooth as possible for our Journal, and puts a lot of effort in the promotion and visibility of our journal *Laboratory Animals*. I am looking forward to continue working together with SAGE and you as readers/subscribers/authors, to promote good Laboratory Animal Science, Technology and Welfare and to publish high quality papers for many years to come. All subscribers should have received an information with access to the on-line version (customer number, name, e-mail address and user name). In case you have problems, please ask the SAGE group.

The online help e-mail address is onlinesupport@sagepub.co.uk. For those who would like to help in the review process please get in contact with me. I welcome any support that I can get with specialized expertise in the vast field of Laboratory Animal Sciences.

Beat Riederer
Editor-in-chief, *Laboratory Animals*
beat.riederer@unil.ch

News from Life Sciences Switzerland



The annual Meeting 2013

was celebrated at the University of Zürich January 31 and February 1st, 2013. The theme was (R) evolutions in Biology. During the meeting the Symposia B entitled (R) evolution in Lab Animal Science was organized by the Swiss Laboratory Animal Science Association (SGV). It was chaired by Beat Riederer, University of Lausanne and Gisèle Ferrand, EPFL. In the two hour symposium that counted for continued education in lab animal welfare, data were presented by three invited speakers and followed by two oral poster presentations.

Dr. Irmgard Amrein, University Zürich, talked about Ecology and evolution: a novel approach to understand the impact of hippocampal neurogenesis. Neurogenesis is differently regulated in wild and laboratory mice. Comparative studies show that cell proliferation is tightly regulated by chronological age.

Dr. Pierre Bize, University Lausanne: Some like it hot: linking endothermy to the evolution of life history traits in the common vole. He demonstrated that altitudinal and climatic gradients may account in parts to body growth, body mass and aggressiveness, and that climate changes may be an important driving force in evolution.

Dr. Xavier Warot, EPFL: The laboratory mouse: from fancy mice to genetic reference populations. He pointed on the importance to have genetic reference population and the variability between the multiple mouse strains.

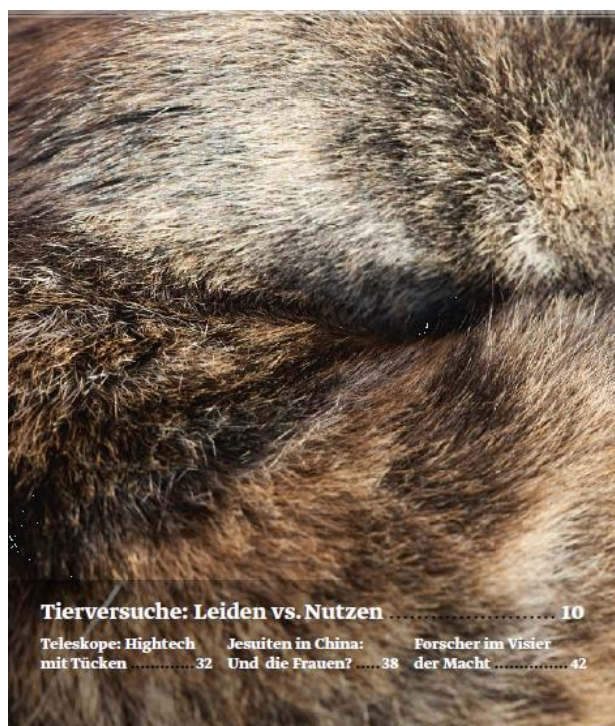
Dr. Claude Schelling, University Zürich: Animal Cytogenetics Today (poster 46) Presented the clinic of reproductive medicine and is offering service and support in the fields of molecular genetics, population genetics of larger animals and cytogenetics with methods such as classical chromosome banding, chromosome painting and PCR.

Dr. Dominique A. Glauser, University Fribourg: A pipeline to identify new genetic and neural pathways of nociception (poster 72) He used a small nematode, *Caenorhabditis elegans*, and its stereotyped avoidance behaviour in response to noxious heat and genetic techniques to study the nervous system wiring involved in « pain ».

At the symposium the participation was very good, with over 40 participants with a positive feedback.

For the organizers:
Gisèle Ferrand and Beat M. Riederer

Horizonte Juni 2013 – Horizons Juin 2013



http://www.snf.ch/SiteCollectionDocuments/horizonte/Horizonte_gesamt/Horizonte_97_D.pdf



http://www.snf.ch/SiteCollectionDocuments/horizonte/Horizonte_gesamt/Horizons_97_F.pdf

SGV Travel grant reports

Spring Hippocampal Research Conference

This very exciting meeting was held between the 9th and 14th of June 2013 in the picturesque town of Taormina, Italy and brought together about 170 participants from several world-class laboratories.

For the last 20 years, the “amyloid cascade hypothesis” has dominated the experimental research aiming at understanding, preventing and curing Alzheimer’s disease (AD). However, a significant problem remained - we are still unable to slow down or prevent the disease progression in human patients, as evident from the failures of large clinical trials in recent years. A potential problem might be the assumption that the molecular mechanism underlying the rare, genetically determined form of AD is identical to the frequent aging-associated variant of the disease. It was therefore of highest importance to bring the basic and clinical scientists together to exchange ideas, concepts and research models to validate the recently formulated hypothesis on the possible mechanism of late-onset AD development (Krstic and Knuesel, *Nature Rev Neurology*, 2013). We organized, therefore, a symposium that was integrated into a larger session that provided a platform to discuss recent experimental data highlighting the role of chronic inflammatory conditions in AD and other neurodegenerative disorders.

Two clinicians Prof. Clive Holmes and Prof. Piet Eikelenboom presented their work from a clinical perspective that focused on detrimental consequences of amyloid-beta immunization therapies and association of incidence of delirium and onset of dementia in elderly population, respectively. Prof. Sue Griffin gave an update on the role of pro-inflammatory cytokine IL-1 and most importantly presented data

supporting very effective role of ibuprofen (an anti-inflammatory drug) on reducing risk for developing Alzheimer’s up to 50%. Dr. Colm Cunningham and PD Dr. Irene Knuesel presented data from pre-clinical mice models of chronic inflammation and the relevance thereof for studying the mechanisms of delirium and Alzheimer’s disease, respectively. Finally, I presented a provocative hypothetical model to describe a potential explanation for the failure of AD field to translate the success in experimental models to the clinic for treatment of AD patients. Our symposium as well as the whole session on inflammatory processes in brain diseases was very well accepted and initiated an extensive scientific discussions – also beyond conference doors.

With it setting, the meeting provided an extraordinary platform to talk, discuss and get in touch with a number of well established scientists. Moreover, the organizing committee also arranged three informal get-together events during the evenings where we could exchange our ideas and points of view over a relax dinner. Thereby I consider the meeting to be a full success and helped me to move forward in my project by gathering new ideas and establishing a collaboration on human brain tissue exchange with Prof. Griffin and Prof. Eikelenboom. In addition, Prof. Griffin decided to cover my talk in *Faculty1000* and by that provide an excellent visibility of the ideas I presented. Hence, I would like to thank the SGV for the financial support allowing me to attend this exciting, instructive and highly motivating meeting.

Sincerely yours,
Dr. Dimitrije Krstic

LTK1: Introductory course in laboratory animal science (FELASA cat. B accredited), Zurich, 27- 31 August 2012

I would like to express my sincere gratitude to SGV Education committee for financially supporting my participation to “Introductory course in laboratory animal science” (FELASA cat. B accredited), Zurich, 27-31 August 2012. I benefited immensely from this course that contributed in a multifaceted way to my training, focusing mainly in educating myself on organizing similar courses, based on Basel Declaration and 3R’s principles.

During this 5-days intense course, I obtained a concrete overview on all major aspects of laboratory animals’ science (Housing, transport, nutrition, animal identification, genetic background); an adequate presentation of Swiss Legislation and Ordinance on Animal Welfare and Protection and its application on everyday animal experimentation and compliance with Ethics issues and 3R’s principles; insights on health monitoring based on FELASA recommendations and realistic aspects on animal health management; excellent and repeated practical training on gentle handling of rodents and performance of routine interventions on lab animals; and much more on analgesia, anesthesia, standardization of experiments, euthanasia and critical assessment of animal experiments results.

I appreciated the excellent organization and high-quality hand-outs of the course (both in hard-copy and electronic format), the availability of all lecturers to open questions, and most of all the excellent educational skills of all lecturers. At this point I would

like to address a special thanks to Dr Philippe Bugnon for his unique training skills during the practical part, which is really a good paradigm for me on how to educate people on my host institute.

It was definitely a must-to-attend course for everybody using animal models, not only for the quality of the information presented and the reference people to meet, but mainly for the exchange of experience in animal research and brain-storming on how to improve animal welfare and promote good laboratory practice, through well and continuously educated animal users.

We are planning to organize similar course within 2012, targeting primary to Hellenic Pasteur Institute’s animal users and by acquiring more experience to expand it to more open audience. In all cases, we will notify SGV and Basel Declaration Society for these courses, as a token of gratitude to SGV travel grant and Basel Declaration Award 2012. We already made a press release for this Award to the Greek press that referred briefly to Basel Declaration Society Principles and soon will be uploaded in Hellenic Pasteur Institute webpage. Hopefully, more action will be taken in the future, of which you will be informed.

Dr Eirini Fragkiadaki, DVM, MSc, PhD (Hellenic Pasteur Institute, Department of Animal Models for Biomedical Research, Vasilissis Sofias 127, 11521, Athens, Greece; Basel Declaration Society Awardee of 2012)

8th FEDERATION OF EUROPEAN NEUROSCIENCE SOCIETIES CONGRESSFENS 14th to 18th July 2012

The plenary lectures were the following ones:

Reward-guided learning and decision making in the frontal lobe, Matthew Rushworth (Oxford, UK)

Recent studies suggest that four frontal lobe regions are involved in reward-guided learning and decision making: the lateral orbitofrontal cortex, the ventromedial prefrontal cortex and adjacent medial orbitofrontal cortex, anterior cingulate cortex, and the anterior lateral prefrontal cortex. They are implicated in learning about reward associations, selecting reward goals, choosing actions to obtain reward, and in monitoring the potential value of switching to alternative courses of action. Humans and other animals have a choice to make each time a potential reward is found: do we have to take this reward or is the environment rich enough to search elsewhere for a better reward. The anterior cingulate cortex could have a really important role in the evaluation of environmental richness.

Genes, environment and context: using fixed circuits to generate flexible behaviors, Cori Bargmann (New York, USA)

Behaviors are influenced by genetic differences, by environment and by experience. Professor Cori Bargmann showed in different studies conducted on *Caenorhabditis elegans* that genetic and environmental variations that affect behavior converge on the same parts of the brain, at the border between the external world and internal motivational states. She also showed that the wiring diagram, considered to be well characterized in *C. elegans*, is ambiguous and not complete because the same diagram can give rise to different responses.

Dendritic computation, Michael Häusser (London, UK)

The main question was how brain activity produces behavior. The brain receives all kinds of input from inside and outside of the body and then produces a specific and generally appropriate response.

The cells are the fundamental compartments where signals are processed in the brain and most neurons have one or more dendrites that receive incoming signals, a cell body that integrates signals and one axon that passes the output of the cell to other cells. Dendrites are active and can react to incoming signals in different ways and in consequence, one single dendrite can act as a computation unit and it can have major effects on signal transmission. Dr Häusser records single cells and single dendrites. By measuring what happens in the dendrites and in the cell body of the same cell, he is able to exactly measure what are the responses to different incoming signals.

Brain can encode messages in two different ways: by the firing rate (stronger signals give more activity) and spike timing (activity from two simultaneous inputs leads to a response): Neurons generally use a mix of both mechanisms.

Dr Häusser showed that dendrite tips are more sensitive to rate coding and cell bodies to spike timing coding.

Neurons receive many incoming signals and the pattern of this incoming signals is relevant to induce an appropriate response; they generate different outputs depending on incoming patterns. Dendrites are also able to react in different ways depending on the order of activation of parts of themselves.

Most of the experiments that led to these observations were made in vitro therefore Dr Häusser lab tried to record dendritic activity in the visual cortex and they were able to confirm that in vivo dendrites also act as computational units.

Control of synaptic function by endogenous cannabinoids, Masanobu Kano (Tokyo, Japan)

Marijuana affects brain functions mostly through the binding of its active component to cannabinoid CB1 receptors. Their endogenous ligands (endogenous cannabinoids: anandamide and 2-arachidonoyl-glycerol) are retrograde messengers. They travel back across the synapse, activate presynaptic CB1 receptors

and cause transient or long-lasting suppression of neurotransmitter release. This process happens in various types of synapses all over the brain.

Endocannabinoid system is mainly involved in learning and memory, in anxiety, in depression, in addiction, in appetite and feeding behaviors, in pain and in neuroprotection.

Brain simulation: the ultimate integration, Henry Markram (Lausanne, Switzerland)

In 2005, Professor Henry Markram launched the Blue Brain Project in which supercomputers are used to reconstruct a detailed computer model of a neocortical column. This model, constructed using reverse engineering studies on the neocortical microcircuitry and by collecting neuroanatomical data, could be used for exploratory projects in a lot of ways such as in silico cell knock-out experiments.

In the future, the model will be completed to include the glial cells and it will be extended in order to modelize the whole brain.

Learning to learn with action video games, Daphné Bavelier (Geneva, Switzerland)

Dr Daphné Bavelier is studying the effects of playing action video games (e.g. Call of Duty"). It surprisingly appears that action video game playing leads to a variety of cognitive enhancements in young adults. Action video game players outperform their non-action-game playing peers on various sensory, attentional and cognitive tasks.

Playing action video games also helps in amblyopia treatment. Amblyopia is the decrease of visual acuity of one eye. It can be treated easily before two years old but after six years old it is almost impossible to cure;

playing action video games reopens the critical window for amblyopia treatment.

Wired for sex: the neurobiology of Drosophila courtship behavior, Barry Dickinson (Vienna, Austria)

Professor Barry Dickinson studies the function of neural circuits in Drosophila. He aims to determinate how innate behaviors are hard-wired into the nervous system and how these innate behaviors could be modified by experience. He focuses on fly courtship. Fruitless is one of the necessary genes for male Drosophila courtship behavior. The male courtship behavior involves wing movements and vibrations. As a proof of concept, Fruitless has been expressed in females which in response behave in the same manner than males. After identification of neurons expressing Fruitless, Dickinson lab separately activated individual neurons by selectively expressing thermosensitive Fruitless in them one at a time, then turning up the heat; using that technique, they determined that P1 neurons were necessary and sufficient for male courtship behavior.

One of the main new techniques that was used in several studies that were presented was optogenetics. It is more and more used for imaging and for transient knock-in (or knock-out) models. Opsins are fused to specific G-protein coupled receptors and they are activated by light; the response is at the millisecond scale, which allows neuron action potentials study or immediate activation (or silencing) of specific proteins.

I wish to warmly thank the SGV for providing me support to attend this very interesting meeting.

C. Cartoni

Frontiers in Stress and Cognition: From Molecules to Behavior 23-26 September 2012

The Frontiers in Stress and cognition Conference was held in the Centro Stefano Franscini, in Monte Verita, Ascona Switzerland over four days at the end of September.

A broad range of stress related topics, including stress inducing factors and stress induced mechanisms underlying vulnerability to psychiatric diseases were discussed through a combination of plenary lectures, symposiums and discussion forums. A major emphasis of this conference consisted in promoting the exchange between researchers using animal models and those currently working on humans in a clinical setting, reflected in the diversity of speakers in the plenary lectures, ranging from psychiatrists to electrophysiologists. The symposiums which stroke out to me as being of extraordinary interest were dealing with topics on "stress emotions, memory and psychopathology" and "Stress, programming and behavioural reactivity". Furthermore, the limited setting of only 160 participants provided optimal conditions to also discuss in a more intimate and focused way.

I was very excited to learn about alternative animal models for early life stress, such as the one from Tallie Baram, which seems to produce consistent, non variable phenotypes therefore drastically reducing the number of animals needed for obtaining reliable results. Furthermore, I learned about new readouts of

maternal care, such as care patterns, which were neglected in many studies thereby causing the repetition of rodent experiments, with no evident effect on maternal care.

Another outstanding insight for me was the application of Legorobots, which are very easy to program, to provide a more naturalistic setting for testing anxiety in response to predators. I strongly believe that animal behavioural experiments have to be reconsidered as in most cases they involve very artificial standardised conditions.

Besides such refinement techniques it was also very valuable to network with psychiatrists in order to establish contacts for potential collaborations to finally translate our findings from animal research to the clinics. Discussions with clinicians for sure are crucial to ensure the relevance of experimental design of animal experiments

I would like to thank you once again for enabling me to attend this meeting by providing me financial support. It was an invaluable experience to discuss with colleagues and cutting edge researchers from the field of stress. I gained valuable feedback on my work and it will undoubtedly advance my own research in the future.

Katharina Gapp

FELASA Category D Level Masters in Laboratory Animal Science modules in the University of Copenhagen, Denmark

Legislation and Ethics in relation to Laboratory Animals"- 19th-20th November 2012

The course gave me deep insights to the two distinct branches which regulate animal experimentation viz. ethics and law. The pre-teaching period started from October 15th 2012 and offered many electronic lectures on Animal experimentation legislation, CITES

legislation, how to legally achieve laboratory animals, animal biotechnology legislation and also provided textbook on Ethics- a Free open access e-book "**The good, the right and the fair - an introduction to ethics**" by Mickey Gjerris, Morten Ebbe Juul Nielsen and Peter Sandoe, March 2011". Further, ethical aspects were made clear by an action packed website <http://ae.imcode.com/en/servlet/StartDoc> This

website systematically gives an idea on what are the different ethical views and to which category we belongs to and why. With this great homework, I attended the teaching days during which, a philosopher Professor Peter Sand e presented some Ethical Theories on Contractarianism and utilitarianism and on animal welfare. Associate professor in Bioethics Mickey Gjerris discussed about animal rights, religious ethics and virtue ethics. Dorte Bratbo Sorensen of The Uni. of Copenhagen gave a group assignment to pick up some examples where we may substantiate our stand on an issue as a Contractarian and later as a Utilitarian and this group work presentations by our team as well as by other teams was really interesting and revealed a complex world and grey areas on ethical stands we adopt while handling different issues. The course was followed by discussion on new EU Directives and the new directives were analysed in detail during group work sessions. Post teaching activities required each candidate to submit three Assignments. The first Assignment was on **“A report on Indian National Legislation of Animal Experimentation”** and this had to be submitted after getting approved by an Indian National Supervisor Dr.N.V.Giridharan PhD. This report of mine was well appreciated and accepted later by The University. Later during the month of May, it was required to submit two more reports- a mandatory report on “The Animal Care and Use Committees and their role in regulating animal experiments in the United States of America” and a self-assigned voluntary report accepted to be done by the Course Director “A Synopsis on basic concepts of Ethics in Laboratory Animal Science”. These reports are submitted to the University and the results are awaited on these two reports.

Laboratory Animal Anesthesia and Experimental Surgery”- 21st- 23rd November 2012

Preparation period started on October 22nd and it was suggested to read a few textbooks on surgical procedures, anesthesia and peri-operative care. Anesthesia and endotracheal intubation in rodents were demonstrated as videos. The teaching period discussed on legislative aspects of anesthesia and procedures, analgesia and euthanasia in lab animals by Dorte Bratbo Sorensen and basics of pain and assessment of pain and physiology was discussed by Associate Professor Klas Ableson. Anesthetic and analgesic pharmacology, fluid therapy, choice of fluids, acid-base balance, maintenance etc were also discussed. The course also involved mechanical ventilation, management of animals, thoracotomy, shock treatment, setting up Ventilation parameters, anesthetic induction and maintenance with gas anesthesia and injectable anesthesia, monitoring of patients, and emergency procedures. Axel Kornerup Hansen, professor, trained the students in anesthesia and care of rats and on few invasive surgical procedures. The surgery post-teaching session has a written examination to be attended and passed to successfully pass the course and it is upcoming in during June 2013.

In short, the courses were extremely useful, and support from SGV to attend the course aided well to disseminate the knowledge for the welfare of laboratory animals and to the entire community, especially in the light of absence of such state of art training programmes in developing countries.

H. Krishnan, Venue- Thorvaldsenvej 57, Ground Floor,
DK-1871 Frederiksberg-C, Copenhagen, Denmark

Society for Neuroscience Meeting, New Orleans, Oct 13-17 2012

Thanks to the generous support provided by a SGV travel fellowship I was able to attend the Society for Neuroscience (SfN) meeting in New Orleans this fall. The SfN meeting is the yearly highlight of my scientific calendar, as some 40.000 neuroscientists from all over the world gather to discuss the latest developments in brain research. It's a tense and busy 5-day meeting where scientists push like ants through rows of thousands of posters to find out about the hottest research, to learn about the most cutting edge technical advances in the field, and to discover which methods colleagues and competitors have recently established in their labs.

After intense poster sessions and keynote lectures during the day, arguably the most important aspect of the yearly meeting takes place in the evenings – networking with colleagues at social events, discussing ideas at dinner, establishing collaborations over a glass of wine. New Orleans, one of the most captivating and fun cities in the United States, of course offers many wonderful venues for these activities. As neuroscience is currently one of the most vibrant fields in science, it was critical for me to seize this opportunity to interact with the internationally most renowned researchers from all across the globe and maintain my international profile.

Calling out the scientific highlight of the meeting is always a difficult and highly subjective task, but my personal favorite this year is the Clarity project headed by Stanford's renowned bioengineer Karl Deisseroth. He presented a breakthrough technological advance that allows his team to make a rodent brain – and in the future hopefully a human brain – entirely transparent, so that cells and neuronal connections within the intact brain can be visualized and scanned using high-powered microscopes. In addition, due to nifty chemical tricks that allow the tissue to become permeable while keeping cellular proteins and structures intact, the brain can also be stained with highly specific antibodies so that neurons or cellular subregions of interest can be tagged and thus imaged and re-constructed in 3-D, without having to slice

through the tissue. This work will allow a new network-level approach to studying brains in experimental setups and in human post-mortem tissue. For basic research, this tool will likely allow for a reduction in the number of animals used for experimentation, since the whole brain can be studied “at once”, without having to, for example, assign different experimental groups to investigating distinct brain regions.

Personally, this meeting was highly insightful and important for me, because I discovered that an American research team is conducting work very similar to my own. During an evening social event I was able to talk to the principal investigator heading the research team and we agreed to share some data and try to pursue a coordinated publication strategy with our similar yet complimentary data. I also established important connections with a Professor I would like to work with in the future; we discussed our plans over a long and enjoyable lunch. I believe that beyond one's scientific achievements, these personal connections are critical for successful career development.

Ultimately, I also presented a poster showcasing the newest research findings from our lab. Our results show that early life stress in mice can induce heritable effects that impair synaptic plasticity and cognitive performance in their offspring. Since my poster was selected by the SfN committee to be part of a pool of “newsworthy research” prior to the conference, many researchers and also journalists visited my poster and showed great interest in my work. I had very stimulating discussions and I received great input from a very diverse crowd of neuroscientists. This will help me design new experiments and pursue more targeted and clear-cut research questions that will deepen our scientific understanding of the inheritance of stress-induced cognitive impairments and their transmission to future generations.

Johannes Bohacek

11th Transgenic Technology meeting

Guangzhou, China. 25-27 February 2013

The focus of this international meeting covered all the different aspects of transgenesis. Here we report details of the topics we found of particular relevance.

A wide study comparing the use of frozen or fresh embryos for ES cell microinjections was presented by the French ROCAD Network which combined the work of seven transgenic platforms. They worked with C57BL/6N and BALB/cN strains and as a source of frozen morulae they tested the two available commercial kits: the Quickblasto from Janvier and the BlastoKit from Charles-River. They showed that the recovery of cryopreserved morulae after thawing is quite efficient, as they can recover around 91-94% of the cryopreserved embryos. However, only 45% of

those morulae were able to develop to the blastocyst stage for the BALB/cN strain and 60% for C57BL/6N. They then mentioned that they observed no significant difference in the quality nor in the survival rate when comparing microinjection in fresh or frozen blastocysts. The most striking difference, clearly favouring the use of fresh embryos, was seen when assessing birth rates and yield of chimeras obtained. Their main results are reported in the table below, which shows that the use of fresh embryos yields vastly superior results. Of note the number of blastocysts used is not equal in all the conditions and less frozen ones were tested. It remains that the use of kits can be used as a support as it is fast and guarantees a given number of blastocysts per session.

Strain	Embryos	Implanted blastocysts	Number of births	% Births/Implanted Blastocysts	Number of chimeras	% Chimeras/Number of births	% Chimeras/Implanted blastocysts
BALB/cN	Fresh	66329	19331	29%	12033	62%	18%
	BlastoKit	1679	186	11%	88	47%	5%
	Quickblasto	101	11	11%	3	27%	3%
C57BL/6N	Fresh	41369	7891	25%	4537	57%	11%
	BlastoKit	951	138	15%	34	25%	4%
	Quickblasto	380	24	6%	5	21%	1%

The Wellcome Trust Sanger Institute (England) presented a poster concerning the use of KOSR-2i (2i) medium for ES cell culture. In their protocol they thaw ES cells in normal medium for 2 days, then place them for 3 days in 2i medium and finally culture them again for 2 days in normal medium before the injection. This time in 2i medium leads to an increase in Germ Line Transmission rates, from 30% to 63%, and in the percentage of chimeras producing offspring (100% transmitters), from 15% to 33%.

Naomi Nakagata from the Center for Animal Resources & Development (CARD), Japan, presented a kit which allows efficient cryopreservation and In Vitro Fertilisation of C57BL/6J mice. This kit enables to get fertilisation rates of 97% (97% of embryos which develop to 2-cell stage).

Some additional interesting points :

Gonzalo Moreno from Spain presented a new method for serial sperm collection in mice without sacrificing (by puncture in the epididymus).

Xin-an Pu from USA made a presentation on general transgenesis trouble-shooting. She notably mentioned that she obtains more oocytes if superovulation hormones are subcutaneously or intraperitoneally (IP) injected at a shallow angle (less deep than normal IP injection). She also said that, in case there are no foster mothers on the day of the experiment, one can sometimes successfully mate mice in the morning with plugs checked just before the transfer (0 dpc).

We would like to conclude by thanking the SGV for its support and contribution to travel expense and meeting registration.

Travel Grant Report: Kick off meeting of the EU Platform and Information Portal on Education & Training – Brussels – July 5, 2013

On July 5, the kick off meeting to launch a European platform and information portal for Education and Training (E&T) was held in Brussels at the EU commission Environment. About 25 persons participated to the meeting. Majority of the participants were course organisers; there were also representatives of authorities, accreditation bodies and professional associations. Sweden, Spain, France, UK, Poland, Hungary and Germany represented Member States (MS).

Why such platform? To answer we have to briefly present the context of the Directive. As I understand the legal flow of the EC, an EU Directive obliges the nations to enforce in their own legislation its different legal articles of law. However, as every legal text, the interpretation of each article allows a certain degree of freedom. To keep some consistency and common view across countries, the EU Commission organises Expert Working Groups (EWG) on specific topics. Conclusions of the EWG are translated in consensus papers that National Contact Points (NCP) may endorse or not and may amend. These endorsed paper have no legal power. Each country makes its own “legal mixture”. Although the Directive is supposed to bring a fairly high level of harmonization, the risk of diversity remains. The idea to establish a platform is to give advices on what is needed for mutual recognition between MS for education and training. The scientific community is highly mobile and if we want to avoid that people have to go through similar education and training programs on and on, we need harmonization. Moreover, best practices should be a must in animal experimentation; it is only by high quality education and training through Europe we will achieve such objective.

The Education and Training scheme concerned exclusively article 23, al. 2, lett. a to c of EU Directive 2010/63. It corresponds, respectively, to persons (a) carrying out procedures on animals, (b) designing procedures and projects and (c) taking care of animals. The first outcome of the kick off meeting was that a provisional platform made of 5 people has been

established with representatives of the UK, Spain, Germany and France. Their first mission is to make a gap analysis over the whole EU to see where strength and weakness in E&T are present. Some MS may not create a structure to enforce E&T but rely on another country; some countries may decide for a continuing education of 1 day a year, some other 0.5 day a year, etc... As mentioned before, although the Directive is supposed to bring unity across Europe, MS may issue regulations increasing the diversity of E&T schemes. The second aim is to propose some procedures for mutual recognition between MS based on approval and/or accreditation. Hopefully the gap analysis will help to clarify this issue. These data are to be presented on September 18 & 19 at the next NCP meeting in Brussels.

Why should Switzerland, outside of Europe, participate to such meeting? We know that our country is ahead of Europe on this matter for a long time. The gap analysis will give us a more precise EU E&T landscape that we have today. This will help us (authorities, institutions) to know what scientists coming from a EU country needs to add to their E&T in order to be fully accredited in our country. On the long run, it will also help the Swiss E&T bodies (LTK, ResAL and others) to adapt to the new directive. It is true that currently with almost all Modules 1 delivered in Switzerland being FELASA accredited; we do not have to worry too much for the future. It was clear from the discussions in Brussels that FELASA represents today the highest standards in Education in animal experimentation.

I would like to thank SGV to have supported my participation to this meeting. It is crucial to stay informed, to try to plan ahead in the field of Education and Training, the care and welfare of our laboratory animals depends on it.

Marcel Gyger, July 7, 2013

SGV Travel grants – the rules

SGV allocates CHF 10'000 (including CHF 4'000 from ScNat) to support scientists for ongoing education in the field of laboratory animal science. This can be changed by the SGV board according to the financial state (minimum = money from ScNat).

Criteria to get a grant

- Travel grants are offered to young scientists only (matriculation number mandatory)
- Courses/meetings must cover important topics in laboratory animal science, husbandry, breeding, experimentation, or for 3R. Short-term scientific missions enabling young scientists to visit other laboratories, eg to learn a new technique, could also be supported
- CHF 500 for CH / CHF 1'000 for EU / CHF 1'500 for other destinations per person and per year.
- Two grants per research group per calendar year
- To be or become an SGV member (CHF 50 per year, for application see sgv.org)
- a written report about the course/meeting in the next SGV newsletter

Application

- Applications shall be sent from the senior scientific responsible to the president of the SGV education committee isabelle.desbaillets@chuv.ch at least 4 weeks before the meeting takes place
- The application must include:
 - first name, surname, position and matriculation number of the young scientist
 - address and name of the research group
 - date, location, name of the course
 - scientific program of the course
 - argument about the importance of the course (see criteria to get a grant)
 - costs

Decision bodies

- Applications for SGV meetings and transfer of a grant to another person: the president of the SGV Education Committee
- Applications for other meetings: the SGV education committee and transfer of a grant to another course: the SGV Education Committee

Transfer of the grant to another person

Announcement to the president of the SGV education committee at least 3 weeks before the meeting takes place with all necessary information.

Transfer of the grant to another meeting/course

Same procedure as for a new application.

Join SGV



The Swiss Laboratory Animal Science Association was founded in 1987. Its aims are the promotion of laboratory animal science and the furthering of animal protection and ethical considerations in animal experiments. These aims shall be attained by organizing education and the flow of information within the scientific community. The society will represent the views of its members vis à vis the authorities and the general public. It will cooperate with other scientific societies both in Switzerland and abroad.

Several commissions support the board in the necessary scientific and educational activities and in the important field of laboratory animal protection. An informal Newsletter is published twice a year; the official journal of the society is Laboratory Animals.

Every Year a scientific meeting is organized, usually as a symposium at the annual meeting of the Swiss Union of Societies for Experimental Biology. A two-day

training course or workshop on a selected topic is held in the autumn.

Each year the society awards a prize to an outstanding contribution in the field of laboratory animals. Financial support may be granted to young researchers attending training courses or meetings.

Eligible as ordinary members (at present approximately 210) are persons who hold appropriate qualifications in biological, veterinary or medical sciences or who, by their experience and attainments, qualify as respected specialists in the field of laboratory animal science. Eligible as institutional members are persons or organizations intending to support the activities of the society.

The membership fees are actually CHF 50 for an ordinary member and CHF 300 for an institutional member.

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