



88
NEWSLETTER
SPRING 2016
REPLACE
REDUCE
REFINE

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SGV MEETING 2016

September 13th – 14th, 2016 University Basel

Reproducibility in animal research: the 4th “R”
The other “Rs” : Reduce-Refine-Replace

Registration www.sgv.org



Word of the President

It is almost 2 years ago when the SGV has published the last newsletter in summer 2014. We had quite some changes during the past 2 years like e.g. a complete makeover of our logo and website, including for the first time also animal pictures, www.naturwissenschaften.ch/organisations/sgv. Our website is now hosted by the SCNAT (Swiss Academies of Sciences). Please be invited and take a look at our new makeover!

In addition, our newsletter will be distributed to a broader audience, it will be published in the Laboratory Animals, our official journal, Laboratory Animals, the international journal of laboratory animal science and welfare. The journal has set up 6 pages per issue for News from Societies starting in 2016.

In 2015 the General Assembly elected the SGV board as every 2 years. The former Board was re-elected with one exception: our colleague Jean-Marc Fellay, responsible for the SGV website, is no longer available for the Board as he decided to leave the field of Laboratory Animal Science and will start a new career in a different profession. The Board cordially thanks Jean-Marc for all his contributions to the SGV during the past years and wishes him all the best for his new professional challenge. We then faced another change at our first Board meeting in 2016. Ingrid Kohler, responsible for the SGV Newsletter, informed us that she will resign from her Board membership. The Board cordially thanks Ingrid as well for all her contributions to the SGV during the past years and wishes her all the best for the future. Ingrid's resignation will be officially announced at our next General Assembly in September in Basel.

The annual meeting 2015 was held at the CHUV in Lausanne dedicated to the "hot" topic "Why sex is important in research". The SGV award 2015 was given to Prof. Irving Zucker, Departments of Psychology and Integrative Biology, University of California, Berkeley, for his outstanding and breakthrough studies and views on sex biased in vivo research. Interestingly, the veterinary authorities in Switzerland already observe an increase in self-declaration in the license applications with regard to the sex distribution of the selected animals.



picture kindly provided by Novartis

And really good news regarding the future of 3R activities in Switzerland! As outlined by our former president Marcel Gyger in the newsletter No 45 from July 2013, the Federal Council had 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). In July 2015, the Federal Council published a report in response to the Postulat. The council recommended the establishment of a Swiss 3Rs competence center as well as extension of training and continuing education of researchers regarding the 3Rs. After a 2 years discussion with representatives from Universities, Industry and Animal Welfare during workshops held at the BLV, all stakeholders agreed on the establishment of a Swiss 3Rs Competence Center. A working group comprising all stakeholders has been formed to discuss the concept for such a center (area of responsibility, operating manual and organizational

structure). This concept should be available end of 2016 and it is planned to initiate the competence center in 2017.

In addition, “Forschung für Leben” will soon publish the outcome of the survey that has been made among researchers from Universities and Pharma Industry in Switzerland on the current status of 3Rs activities in research. In this context, I would also like to remind you to participate in the Swiss 3Rs Network, <http://swiss3rnetwork.org/>, the interactive platform for the promotion of the 3Rs in animal experiments.

Finally, this year our education committee has once more organized a high quality SGV meeting with speakers from Europe, Switzerland and USA. The annual meeting will be held in Basel on September 13 and 14. The meeting addresses a very important topic on the importance of a 4th “R”, the reproducibility in animal research. We are very proud having Prof. Malcolm MacLeod with us for the SGV Awardee lecture 2016 for his outstanding and pioneer research on the systematic review approach in animal studies which has been crucial in reevaluating critically pre-clinical studies. The 2nd day of the meeting is entirely dedicated to the “other” 3Rs principles such as “Replacement” with the presentations of in vitro or invertebrates models, “Refinement” with the new CRISPR/CAS9 technology to generate genetically modified animals and its ethical issues. Finally “Reduction” with a few short communications on the possibility of sharing tissues and organs between researchers. On this special 3Rs day, we will also have the presentation of the new Swiss 3R Competence Center. We hope, you will find the program attractive and applicable for your daily work. Please join the meeting. The registration will start in May. You will find the program and location inside this newsletter and this link will lead you to the registration form: <http://www.naturwissenschaften.ch/organisations/sgv/meetings/63148-sgv-meeting-2016>.

All that remains is for me to wish you a good spring and summer time and looking forward to meeting you in Basel in September and at our SGV General Assembly on September 13th.

Birgit Ledermann, President of the SGV



picture from Fotolia.com

Progress report – SGV fund « 25 years »

While many biological studies can be performed on cell-based systems, the investigation of molecular pathways related to complex human dysfunctions, such as neurodegenerative diseases, often requires long-term studies in animal models. The nematode *Caenorhabditis elegans* represents one of the best model organisms for many of these tests and, therefore, versatile and automated systems for accurate time-resolved analyses on *C. elegans* are becoming highly desirable tools in the field.

Through a collaboration between the Laboratory of Integrative Systems Physiology, headed by Prof. Johan Auwerx, and the Laboratory of Microsystems, headed by Prof. Martin Gijs, we have developed a new multi-functional platform for *C. elegans* analytical research, enabling automated worm isolation and culture, reversible worm immobilization and long-term high-resolution imaging, and this under active control of the main culture parameters, including temperature. As a proof-of-concept study, we employed our platform for *in vivo* observation and automated analysis of protein aggregation in a *C. elegans* model for amyotrophic lateral sclerosis (ALS). Our device allowed monitoring the growth rate and development of each worm, at single animal resolution, within a matrix of microfluidic chambers. We have observed and quantified the progression of individual protein aggregates in the body wall muscles of each worm over several days. Moreover, by combining reversible worm immobilization and on-chip high-resolution imaging, our method allowed precisely localizing the expression of biomolecules within the worms' tissues, as well as monitoring the evolution of single aggregates over consecutive days at the sub-cellular level. We also showed the suitability of our system for protein aggregation monitoring in another model of neurodegenerative disease in *C. elegans* (i.e. Huntington disease (HD)), and demonstrated the system's ability to study long-term drug treatment-linked modification of protein aggregation profiles.

In conclusion, our microfluidic-based method allows analyzing *in vivo* the long-term dynamics of protein aggregation phenomena in *C. elegans* at unprecedented resolution. Pharmacological screenings on neurodegenerative disease *C. elegans* models may strongly benefit from this method in the near future, because of its full automation and high-throughput potential.

This scientific research has been published on the journal *Molecular Neurodegeneration* on February 2016 and entitled "Automated longitudinal monitoring of *in vivo* protein aggregation in neurodegenerative disease *C. elegans* models » by Cornaglia et al.

These results will be presented on Wednesday 14th during the SGV annual meeting dedicated to 3Rs.

Laurent Mouchiroud, Ph.D.

Laboratory of Integrative and Systems Physiology, EPFL

The Ethical Principles and Guidelines for Animal Experimentation: a few comments.

The other day I was strolling through the BLV website and went to the section on legislation. On this web page you have a link to the “Ethical Principles and Guidelines for Animal Experimentation” (Principles and Guidelines) issued by the Swiss Academies of life and medical sciences (see <http://www.blv.admin.ch/themen/tierschutz/00777/03585/index.html?lang=fr>, this is the French version, you will find the Principles and Guidelines in German but neither in Italian nor in English). Having a closer look to them, a few comments came to my mind that I would like to share with you.

First, knowing the high concentration of foreign scientists in our country and that Ticino has an animal experimentation activity, how can we only have the “Principles and Guidelines” in German and French?

The second comment relates to the date of revision. The “Principles and Guidelines” were published for the first time in 1983. The first revision was done in 1995, with the introduction of the GenLex and the concept of dignity of the living organism. In 2005 a second revision took place, just before the start of the major animal welfare legislation revision. Logically 2015 should have been the date for the third revision of the Principles and Guidelines. Not only for calendar reasons such a revision would have been welcomed but also to integrate the numerous changes that the law has incorporated in its last version. Does the absence of “Principles and Guidelines” revision today means absence of usefulness of the “Principles and Guidelines”? Is there a consensus on the fact that the today law covers all possible gaps that older legal documents had left open? There is a sentence in the “Principles and Guidelines” that you find in all three versions, from 1983 to 2005, saying that “...the legal framework still leaves a significant room for interpretation which needs to be limited by the authorities on one hand and by the researchers themselves on the other..” [see point 1.3; *unofficial translation by the author*]. Is this sentence still valid today?



A third comment concerns the responsibility of the institutions themselves, a point which has been added to the 2005 version of the “Principles and Guidelines” by splitting the responsibility section [point 5] into two separate paragraph. Section 5 concentrates on the researcher responsibilities and the new Section 6 aims the institutions. By institutions, the committee means the research institutes which practice animal experimentation, the granting agencies which sponsor animal experimentation, the editorial board of scientific journals and their peer reviewing committees, and finally both Swiss Academies of Life and Medical Sciences. Interesting to note, the institutions that practice animal experimentation have issued in 2013 a common policy (CRUS/swissuniversities policy) on the question of animal experimentation. This paper is not reported on the BLV website although it represents a major achievement and consensus of the academic community. Shouldn't this document figure on the BLV website? Should it not be referenced in the “Principles and Guidelines”?



picture from Fotolia.com

A fourth and last comment concerns point 5.2 of the “Principles and Guidelines” which deals with research done in collaboration with foreign institutions. With the extraordinary blooming of collaborations all over the world, this paragraph raises some interesting questions. Should we collaborate with research institutions in countries with much less stringent legal requirements in housing and experimentation? If China pops up first to our minds, non-human-primate research collaborations (animals but also biological samples) with US labs should also be challenged. Just think of the housing requirements for NHP in Switzerland versus the US! The Pharma industry had to tackle the question of worldwide policy a while ago. Should the academic world discuss such a regional/worldwide issue too?

Strolling through the web can be very time consuming with the feeling that one has lost time, sometimes you hit some interesting points. To me there is an urgent need to revise the “Ethical Principles and Guidelines for Animal Experimentation”. It is the reason why I thought worth to share this brief note with you.

Marcel Gyger, EPFL

Update of the activities of the Swiss Animal Facilities Network SAFN

In the last SGV newsletter (n°47), I briefly introduced the Swiss Animal Facilities Network SAFN and its foreseen activities and presented a summary of the network activities at the SGV 2015 meeting in Lausanne. I would like in this short article to let you know about the last developments of our network.

Indeed, a key step to strengthen the network was accomplished this spring with the hiring of a network coordinator. Employed by swissuniversities¹, located in Bern, the coordinator will oversee the activities of the working groups and help turning into concrete actions the projects of the SAFN. He will be a partner for all academic institutions performing animal experimentation. The coordinator will start his work on June 1st, 2016. In the next months, you will probably see him in your institution, for a get-to-know-each-other visit.

The three working groups of the SAFN have continued and deepened their activities.

The working group on communication has developed and enriched the argumentarium on animal experimentation for the institutional communication offices. Factsheets summarizing the importance and the benefits of animal experimentation in various research areas will be established.

The working group on health monitoring met twice since the beginning of 2016 (last meeting was on May 19th, 2016) and started its work by an exchange of information about health policies and procedures.

The working group “planning future centralized facility” issued last year a recommendation on the way to proceed, with a first step being the implementation of a network of services. Amongst the services that could be shared, transgenesis activities come on top of the list. A first contact was established end of last year 2015. Turning into reality the ideas shared during the meeting will be one of the first tasks of the coordinator.

As you can read, the SAFN is a dynamic network, with a rich agenda for the future years, which should benefit all of us for our daily work in our different institutions.

Last word, my warmest thanks to all my colleagues of the Executive Board for their work and their commitment in the network, as well as the members of the Strategic Board and our academic institutions for their support in the SAFN activities. I would also like to acknowledge the dedication and efficient work of the team of swissuniversities which oversees the project. This exciting endeavour would have never worked without the strong commitment of all these persons.

Xavier Warot, Chair of the SAFN Executive Board

Contact: safn@swissuniversities.ch

¹ As a reminder, the SAFN is part of swissuniversities. swissuniversities is the rectors' conference and common body of the Swiss universities, universities of applied sciences and universities of teacher education.



picture from Fotolia.com

Constitution of the Swiss Animal Welfare Officer Network

During the Swiss Animal Welfare Officer (AWO) Network meeting on March, 9th, 2015 the members decided on a first AWO working group that should define the purpose and framework of the AWO network. Isabelle Desbaillets (EPFL), Maïke Heimann (Swiss Education Network, ETHZ), Marjolaine Philit (University of Geneva), Laure Seriot (University of Lausanne), Stephan Zeiter (AO Research Institute Davos) and Michaela Thallmair (University of Zurich) as members of the group met for several discussions and put together a draft for the constitutions of the Swiss AWO Network that was reviewed by all members of the network and their institution board. Their feedback was implemented and the constitution was approved unanimously at the Swiss AWO Network meeting on September 7th, 2015.

In this Swiss AWO Network meeting Birgit Ledermann was confirmed as Chair for the next 2 years and Michaela Thallmair was confirmed as Vice Chair by the assembly. The next elections will then take place at the first meeting in 2017. It was decided that the Swiss AWO Network will maintain one mailing list exclusively for members of the network. In case the information distributed is important to other persons in the institutions, the members can distribute the information.

A logo for the Swiss AWO Network based on the SGV logo was adopted.



Constitution of the Swiss Animal Welfare Officer Network

1. Purpose of the Swiss Animal Welfare Officer Network

- To exchange information and knowledge regarding animal welfare in animal experiments (including breeding and housing) through persons responsible for animal welfare (thereafter referred to as animal welfare officers) of Swiss academic institutions and industry in the Life Sciences (in the following text, the term “Institutions” includes academy and industry)
- To promote and implement the 3Rs in the academic institutions and industry
- To provide rationales in order to improve communication/ information to the public audience and scientific community regarding animal welfare in animal experiments (including breeding and housing)

- To act as an official contact regarding animal welfare for other societies and authorities and as such, to be actively involved in working on guidelines and revisions of laws and regulations
- To provide factual Animal Welfare information on a publicly available website
- To implement a compulsory animal welfare officer position at each institution

2. Members

A maximum of two animal welfare officers (principal and deputy) per institution can be sent to the AWO network meetings. Each institution selects their representative independently.

Each institution has one vote during the assembly.

Institution is defined by the responsibility of the animal welfare officer position. The Swiss network for education in Laboratory Animal Science is considered as “institution” that selects 2 members and has also one vote during the assembly.

3. Working groups

Working groups can be formed to achieve the purpose and goals of the Swiss Animal Welfare Officer Network.

New working groups are defined by the assembly. Existing working groups are ratified by the assembly.

Members of the working groups are selected on a voluntary basis. They are allowed to invite external experts to take part in the working groups.

4. Board

The board of the Swiss Animal Welfare Network consists of a Chair and a Vice Chair.

Members of the board are elected by the assembly for 4 years. Re-election is possible for a second mandate.

Responsibilities/ tasks of the board members:

- Chair
 - Is the contact person representing the network
 - Is the representative of the European Animal Welfare Officer Network
 - Distributes information to the assembly
 - Sets the agenda for the assembly
 - Leads assembly

- Vice Chair:
 - Supports and deputizes the Chair
 - Keeps member and mailing lists updated

Recommendation: the positions of the Chair and Vice Chair must be filled by representatives from both academia and industry.

5. Assembly

The Swiss Animal Welfare Officer Network meets twice a year. Further meetings can be held upon demand.

The agenda of the assembly is sent at least two weeks before the meeting date.

Decisions of the assembly are made by majority rule of attending voters, except for decisions upon the constitution, where a 2/3 majority of attending voters is needed. Each institution has one vote. It is not possible to delegate the vote.

Duties of the assembly:

- Approves the constitution or changes thereof.
- Elects chair and vice chairs
- Is the decision making body.
- Defines new working groups and concludes existing ones.

Minutes are taken by a voluntary member, distributed by the chair and must be approved at the next assembly.

6. Key partners

The Swiss Animal Welfare Officer Network will closely work together with the following key partners to achieve its purposes and goals:

- - Swiss Animal facility network (SAFN)
- - Federal Food Safety and Veterinary Office (FSVO)
- - 3R Research Foundation Switzerland
- - Swiss Laboratory Animal Science Association (SGV)
- - Schweizerischer Verband für Bildung in Tierpflege (SVBT)
- - Other organizations related to animal welfare and laboratory animal science

Key partners do not have a representative at the assembly, nor will they be on the e-mailing list. It is the Chair of the AWO Network (or the Vice-Chair in the absence of the Chair) that will communicate with the key partners.

7. Confidentiality

All information discussed or shared within the Swiss Animal Welfare Officer Network has to be treated as confidential if classified as such.

8. Finances/ support

There is no membership fee.

The SGV supports the Swiss Animal Welfare Officer Network financially. With this support, travel and room costs are covered for the official representatives of the institutions to attend the assembly and for members of working groups (incl. experts) to attend their meetings.

Internal inspections by Animal Welfare Officers

On the side of often highly competitive research goals, researchers involved in animal experiments need to pay attention to animal welfare and legal regulations in their daily work. Maintaining clarity over regulatory details is an overwhelming challenge for many.

Inspections of animal husbandries and experiments by cantonal authorities (veterinary office) and members of the cantonal commissions for animal experiments are required by the animal welfare legislation. Additionally, in recent years, industry as well as academic institutions has hired animal welfare delegates, e.g., animal welfare officers, for internal consultation, education and in many cases also for internal inspections.

During last meeting of the Swiss Animal Welfare Network on March 8th, 2016 a discussion on inspections of animal facilities and animal experiments as well as sharing of experiences in this field took place. Here, we provide a summary on this topic.

Many researchers recognize the need for supervising animal experimentation and husbandry also in the light of the public debate on animal experimentation, but prefer at the same time a discussion instead of a formal inspection. Already the word “inspection” has a negative connotation for a few researchers. Some researchers fear that the sole goal of the inspections is to find shortcomings that may lead to sanctions. Indeed, an optimal inspection praises refined procedures and housing above standards, delivers assurance on procedures or housing done correctly and at the same time encourages implementation of the 3Rs and the adoption of a “culture of care”.

In terms of inspections, the Swiss Animal Welfare Officer Network proposes that the animal welfare personnel performs internal visits of the animal facilities and spot-checks that the legal obligations and internal guidelines are not violated. At the same time the animal welfare officers shall spot-check animal experiments and verify that the animal experimentation licenses are followed. Such internal inspections of animal husbandries can take place without prior notification or can be

announced, for example, to observe a technically challenging experimental procedure on the animals. With an institutional animal welfare officer role implemented, researchers have the possibility to confidentially consult an expert on animal welfare regulations and the 3Rs and obtain advice on specific challenges in animal welfare or certain procedures.



picture from Fotolia.com

How the animal welfare officers approach their inspection task varies. Attention is drawn on compliance with animal welfare regulations and institutional policies. Animal husbandry inspections are time-consuming since careful observation of the husbandry rooms (e.g., air, light, temperature), technical equipment (e.g. IVC racks), cages or stables (e.g. equipment, enrichment, bedding), animals (e.g., behavior, appearance) and the documentation (e.g. cage cards, monitoring of constraints) is required. At the same time hygiene restrictions may not allow to visit several rooms during one visit. Thus, in practice it may be impossible to inspect all aspects of compliance during a single visit. Recording the visit, writing a protocol and/or discussing the visit with the responsible researchers or animal care takers commonly follows the inspection. Collected information should be handled confidentially within the institution's administration.

Inspecting animal housing facilities including the animals provides an overview on animal welfare. On the other hand, it is obvious that also experiments and procedures need to be observed by the animal welfare personnel and that the documentation of experiments needs to be checked. Here, an animal welfare officer well connected in the field of animal experimentation and animal welfare can support scientists leading to better animal welfare and concomitantly better science.

Time is a limiting factor for cantonal authorities as well as animal welfare officers at larger institutions. Therefore, often inspections are targeted where animal welfare and compliance is most challenging and at highest risk. Risk analysis criteria are suggested in e.g. a working document on inspections and enforcement to fulfill the EU directive 2010/63 (Brussel, 2014). General recommendations to inspections, irrespective of field, are available in DIN EN ISO/IEC Norm 17020, which especially emphasizes that, for objectivity, the inspector should be independent, unbiased, fair and free of conflicts.

How putative non-compliance observed during an animal welfare officer's visit is handled varies by institution. In industry, similar to non-compliance in other fields, delegation to non-compliance experts is used also in the area of animal welfare. At academic institutions the animal welfare officer typically escalates non-compliance cases to higher levels of administration. Internal measures to remedy non-compliance include temporarily denying access to animal husbandries or stopping animal orders or breeding. In more difficult situations termination of experimental licenses or measures affecting employment can be included. Rules governing escalation and possible sanctions should ideally be communicated transparently to all units. Despite possible sanctions, trust building between persons working with animals and the institutes' animal welfare officer is essential for good communication and resolving challenges early on. With the institutions animal welfare delegates, the possibility of discussion and consultation is at hand.

***Annamari Alitalo and Michaela Thallmair,
ETH Zürich and University Zürich Animal Welfare***

SGV Travel Grant Policy

To support its members for continuing education, the SGV has at its disposal a total amount of CHF 10'000. The SGV Board according to the state of the SGV finances can change this amount. A minimum of CHF 4'000 is covered by money donated by the Swiss Academy of Sciences. Travel grants will be given to members either working in CH or coming from abroad to CH for a continuing education course or for projects related to the 3Rs. A first portion of funding of CHF 7'000 is allocated to early career members for continuous education purposes. The next portion of funding of CHF 3'000 is dedicated to members who will actively contribute to the 3Rs (i.e. a 3R course organizer, FELASA Days, etc). If by August 1st, there is still money available from the second portion, it will automatically be transferred to the first portion. The SGV Board will discuss exceptions.

Criteria to get a grant

- Be or become a SGV member.
- Only courses with an importance in laboratory animal science (LAS), husbandry, breeding or experimentation with a gain of knowledge in the 3Rs will be acknowledged.
- Preference will be given to Ph. D - students in their final student year or to postdoctoral fellows in their initial postdoctoral years.
- Candidates will be supported only if they actively participate to the meeting by presenting a poster or an oral communication.
- One grant per person will be allocated over a period of time of 4 years: CHF 500 for CH / CHF 1'000 for / from EU and other destinations.
- One grant per research group per year. One grant per conference per year. Should another member apply for the same conference, the grant policy is based on "first-come, first-served".
- Short-Term Scientific Missions enabling young scientists to visit other laboratories, for instance to learn a new LAS technique will also be supported.
- At the end of the meeting or mission, a report will be sent to the president of the SGV education committee for publication in the next SGV Newsletters.

Application

Applications will be sent by email to the president of the SGV education committee by the laboratory principal investigator (senior scientist) at least 4 weeks before the beginning of the meeting/project/mission.

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

- The SGV education committee.
- For exceptions, the president of the SGV education committee will transfer the application to the SGV Board.

Transfer of the grant to another person

- The grantee will provide specific information to the president of the SGV education committee at least 3 weeks before the meeting. The SGV education committee will then decide whether or not to transfer the grant.

Transfer of the grant to another meeting/course

- If the grantee wishes to transfer her/his grant to go to another course, she/he will contact the president of the SGV education committee.



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Program of the SGV annual meeting in Basel



SGV 2016 meeting
September 13th & 14th, 2016
University Basel, Basel

Tuesday morning, September 13th, 2016
Reproducibility in animal research: the 4th "R"

09:00 09:05	WELCOME	SGV President
		<i>Chairpersons:</i>
9:05- 9:25	Importance of reproducibility in animal research	Funding agency
09:25 - 10:25	Reproducibility issues in science (shared responsibilities: researchers, institution, grants, journals)	CG Begley (TetraLogic Pharmaceuticals, USA)
10:25 10:50	The reproducibility initiative in cancer research	E. Iorns (ScienceExchange, USA)

COFFEE BREAK- INDUSTRIAL EXHIBITION (40 min)

	How can we improve reproducibility?	<i>Chairpersons:</i>
11:30 11:50	The MULTI-PART initiative	M. MacLeod (University of Edingburgh, UK)
11:50 12:15	ARRIVE guidelines on reporting standards for preclinical animal studies	N. Percie du Sert (Nc3Rs; UK)
12:15 12:40	Evaluation of the scientific validity of animal experiments in Switzerland	Hanno Würbel (University of Bern, CH)

LUNCH- INDUSTRIAL EXHIBITION (1h10)

Tuesday afternoon, September 13th, 2016

	How to improve reproducibility?	<i>Chairpersons:</i>
13:50 14:35	How to design an animal experiment?	M. Berdoy (Nc3R initiative)
14:35 15:20	SGV AWARDEE LECTURE 2016 Risk of Bias in Reports of In Vivo Research: A Focus for Improvement	M. MacLeod (University of Edingburgh, UK)
15:20 15:45	Improving basic and translational science by accounting for litter-to-litter variation in animal models (what is "N"?)	S. Lazic (AstraZeneca, UK)
15:45 16:10	Will we be able to reduce the number of animals if both sexes are used in research projects?	F. Schütz, (University Lausanne, CH)

COFFEE BREAK- INDUSTRIAL EXHIBITION (35 min)

	Reproducibility initiatives: other examples	<i>Chairpersons:</i>
16:45 17:10	Reproducibility: changing the policies and culture of cell line authentication	L. Freedman (University of South Carolina, USA)
17:10 17:35	Reporting and reproducibility in animal models of colitis	S. Cruickshank (University of Manchester, UK)

This course is accredited as continuing education in Switzerland for experimenters and study directors in animal experimentation.
Tuesday 13th September 2016: SGV General Assembly at 18:00
Gala Dinner at 20:00



SGV 2016 meeting
September 13th & 14th, 2016
University Basel, Basel

Wednesday morning, September 14th, 2016
The other "Rs": Reduce-Refine-Replace

09:00 09:05	WELCOME	SGV President
	Invertebrates in Replacement	<i>Chairpersons:</i>
9.05- 9:35	Future Swiss 3R Competence Center	C. Leumann (University Bern, CH)
09:35- 10:05	A model for intestinal cancer in adult Drosophila A Comparison with the mouse model	J. Cordero (University of Glasgow, UK)
10:05 10:35	Drosophila as a model organism for neurodegenerative diseases.	A. Voigt (Aachen University, D)
10:35 11:00	Development and validation of a microfluidic device for high-throughput toxicity assays in C. Elegans	L. Mouchiroud (EPFL, CH; SGV 25 th Fund)

COFFEE BREAK- INDUSTRIAL EXHIBITION (40 min)

	Cell culture models	<i>Chairpersons:</i>
11:40 12:10	Engineering cancer microenvironments for in vitro 3-D tumor models	U. Demirci (Stanford University, USA)
12:10 12:40	Ex vivo engineered immune organoids	A. Singh (Cornell University, USA)
12:40 13:10	Metastasis-on-a-Chip	A. Skardal (Wake Forest School of Medicine, USA)

LUNCH- INDUSTRIAL EXHIBITION (1h10)

Wednesday afternoon, September 14th, 2016

	CRISPR/CAS9 editing	<i>Chairpersons:</i>
14:20 15:00	CRISPR-Cas systems for editing, regulating and targeting genomes (advantage/disadvantage with the other transgenic methods)	P. Pelczar (University of Basel, CH)
		<i>Chairpersons:</i>
15:00 16:00	No time to waste—the ethical challenges created by CRISPR	C. Plunkett (New York University, USA)

COFFEE BREAK- INDUSTRIAL EXHIBITION (35 min)

	Short Communications	<i>Chairpersons:</i>
16:35 16:55	AniMatch- an innovative approach to reduce lab animal usage (share of tissues and organs over EU)	A. Lang (Berlin, D)
16:55 17:15	Sharing resources to accelerate research into ageing (Biorepository; www.sharmuk.org)	I. Bellantuono (University of Sheffield UK)
17:15 17:25	Is this approach possible/accepted in Switzerland?	Federal veterinary Office (BLV, CH)

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