

Minutes of the 4th Annual Community Meeting of



on 11 - 12 July 2013 in Fulda

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Attendees

Ivan Baines	Felix Bestvater	Gertrude Bunt
Steffen Dietzel	Hans Fried	Anja Glenk
Niels Grabe	Hella Hartmann	Peter Hemmerich
Antje Keppler	Thomas Kessler	Karol Kozak
Christian Liebig	Holger Lorenz	Elisa May
Dorit Merhof	Jürgen Neumann	Roland Nitschke
Jan Peychl	Jürgen Reymann	Astrid Schauss
Anje Sporbert	Anthony Squire	Martin Stöckl
Stefan Terjung	Nadine Utz	Matthias Voetz
Andreas Vonderheit	Stefanie Weidtkamp-Peters	Werner Zuschratter

1 Introductory Remarks by Roland Nitschke, 11 July 2013, 1.00 pm - 1.20 pm

Roland Nitschke gave a short overview about the history of German BioImaging (GerBI) and a status report on its activities during the last year. Thanks to granted support by DFG, German BioImaging hired Dr. Nadine Utz as project manager and Nayeem Khan as system administrator (50%). An article was published in *Imaging & Microscopy* to inform and raise awareness about the network. Regularly “News from German BioImaging” emails were sent to the community to inform about news and activities of interest for German light microscopists. A mailinglist was created for exchanging news and contacting the German BioImaging Community. For the moment only scientists working in a microscopy research group or core facility can subscribe. The German BioImaging Steering Committee Meeting took place on 22 January 2013 in Vienna and a meeting of all workgroup speakers and the Steering Committee on 27 - 28 February 2013 in Frankfurt am Main. Currently 47 facilities are registered on the GerBI web page and 96 scientists are subscribed to the mailing list. The web page has been revised according to the suggestions of the Steering Committee and Workgroup Speakers. A distinction will be made between canonical facilities, microscopy research groups, and sites operating as both research group and facility. Facilities have to provide a link to a web page with the description of access rules. The equipment list in the *Facility* form has been changed into a user friendly list of techniques. The map on *Mainpage* displays now several facilities in the same city.

2 Presentation of Results by Workgroups, 11 July 2013, 1.20 - 5.30 pm

2.1 WG1 *How to set up and run a biological imaging facility* by Roland Nitschke

Workgroup 1 should integrate topics of workgroups 2-6 and build the framework. Existing literature regarding how to run a facility, which has been collected by WG1, shall be listed on GerBI web page (password protected). There is still the need for a “Best practice manual” as planned by GerBI, because literature is partly outdated, not in German, and not specific for German rules. Furthermore, WG1 identified topics which are not covered by other workgroups, i.e. definition of the mission, the users, the instrumentation, the budget, location, building and room requirements,

website of a facility, operation access rules, user management and scheduling systems, and how to acknowledge facility work properly. One joint survey covering questions of all workgroups shall be published in mid October. German facilities shall be asked about their instrument/staff ratio and results shall be compared with the GerBI survey from 2011.

2.2 WG2 *Financial and legal framework of imaging facilities* by Jan Peychl

Workgroup 2 presented examples of user fee models in different institutions, i.e. LMF MPI-CBG, LMF BIOTEC/CRTD (TU-Dresden), Center for Advanced Imaging (CAI) University of Düsseldorf. Each institute has to define which part of total costs such as consumables, personnel, instrument depreciation, overheads, and VAT are charged to internal users, collaborators, and external users and which partial costs are covered by the institute. Costs for different techniques and instruments can vary depending on e.g. acquisition costs and service contracts. This can be taken into account by different user fees for each instrument or can be distributed equally between all instruments. User fees ensure that instruments are booked only for the necessary time and reduce no-show cases. Many issues were raised by the audience regarding user fees at large and in particular about the presented different models and DFG usage rules and user costs. WG2 will provide information about the presented fee models and examples on the web page.

2.3 WG6 *Image Analysis* by Jürgen Reymann

Workgroup 6 would like to connect expert software solutions such as Python, Matlab, or R with community software solutions like ImageJ, Fiji, or KNIME. There should be common image analysis platforms and formats and the interoperability of algorithms should have a community friendly format. To identify the image analysis needs of microscope users and developers a survey was published in May. 103 scientists filled in the survey, of which were 52 basic users and 49 advanced users/developers. The perfect solution for microscopists would be to use an imaging software infrastructure. However, it is very difficult to receive funding to develop an open source software infrastructure operating in a user friendly way. During the discussion many participants mentioned having problems to hire or retain imaging analysis specialists and to find funding for a programmer. How can we make funders aware about the problem?

2.4 WG5 *Training of facility users* by Christian Liebig

Workgroup 5 developed a work plan for defining teaching modules with the goal of having a curriculum for a “Good Imaging Practice License”, putting together a list of recommendations for hands-on user training, coordinating activities with EUBI training work package and GerBI workgroup 4, and producing a list of current microscopy training activities around Germany. Basic teaching modules have already been finalised and are published on the GerBI WG5 web page. Furthermore, first recommendations for user trainings have been published, divided at present in: *before going to the microscope*, *1st training session*, *after the 1st training session*, and *to get full user status*. To produce a list with existing and wanted microscopy training activities around Germany, a survey is planned for autumn. During the discussion it was mentioned that having standards about the content of user training which are followed by all staff members is important even within an individual facility. Furthermore, German BioImaging could organise and subsidize courses that have been recognised as important but are not yet implemented.

2.5 WG4 *Training of facility staff* by Stefan Terjung

Workgroup 4 defined specific training needs of bioimaging core facility staff which is listed on the GerBI Workgroup 4 web page. The list will be revised together with WG5. Many courses are offered at a basic and advanced user level, but more detailed courses and soft skills and management courses are missing.

During the ELMI staff training session, Pavel Hozak presented the results of the EUBI work package training, which are very much EUBI node-oriented and hardly transferable to the needs of German core facility managers. According to the survey presented during the ELMI meeting, there are only very few courses available tailored to the needs of core facility staff and most respondents would like to have one web page as a central repository for announcements of courses. Therefore, German courses for core facility staff should be coordinated together with other bioimaging communities and German BioImaging should stay in contact with the EUBI work package training. Nadine Utz shall take care of it. The available courses shall be published on the planned GerBI Calendar on the web page and as well on the ELMI homepage if courses are open for non-German scientists.

In October the first GerBI Core Facility Management Course for Imaging Specialists will take place in Ludwigshafen at Lake Constance. Core facility managers find themselves in a variety of different roles that demand a broad set of skills they traditionally haven't been taught in their academic career. GerBI has hired *hfp consulting*, a company who specialises in supporting scientists to improve their leadership and management skills, to develop and run an intense, interactive and highly specialised workshop that addresses these challenges.

Further specialized courses are planned in cooperation with microscopy companies. The community will be contacted to find out which topics would be of interest. A Staff Exchange Programme shall be launched this year to give the opportunity to learn new techniques, get to know the general operating procedures in other core facilities, or attending courses as a guest. Travel costs and accommodation can be subsidized by German BioImaging.

During discussion a sub-page of GerBI was proposed as a contact point on which core facilities and imaging groups can list techniques and courses offered. Furthermore, the web page of the Royal Microscopy Society was mentioned as a good example for having a list of core facility staff courses including a "how to set up a facility" course.

2.6 WG3 *New strategies and funding schemes for imaging facilities* by Elisa May

Workgroup 3 sent a letter to the DFG-"Fachkollegiaten" in the life sciences to draw attention to the possibility that user fees for microscopy core facilities can be applied for in DFG grants. There is a need to raise awareness about this possibility amongst both applicants and referees (Fachkollegiaten) since funding for user fees are often cut in DFG proposals.

For many research groups and facilities it is very difficult to raise the money necessary for repair and maintenance of microscopes. WG 3 would like to collect concrete cases. As it might be difficult to receive information about cases in the past, a hotline was proposed to which scientists can report their difficulties anonymously. German BioImaging can use this database to start discussions with funding bodies about how the necessary money can be raised. For example, an overhead dedicated to repair and maintenance costs could be added to DFG instrument grants.

German BioImaging drafted a position paper concerning the creation of a new type of professorship for directors of imaging core facilities. This paper has been presented to the work group “Career Paths in Science” of the German Council for Science and Humanities (Wissenschaftsrat). In Germany the position of a facility head varies from institution to institution. There is no defined career path. Many facility leaders are often in a difficult position in making their case inside the institute as decisions are mostly taken at the professorship level. WG3 will start an internal discussion about how such an infrastructure professorship could be shaped.

German BioImaging monitored the German Euro-BioImaging (GEBI) proposal for inclusion in the German national Roadmap for Research Infrastructures by the BMBF (see section 5). The BMBF did not include GEBI in the German Roadmap. The coordinators of German BioImaging sent a letter to Minister Prof. Wanka, which had been signed by 40 scientists, to express the concern of the bioimaging community about the negative impact of this decision on German scientists.

Since the first GerBI Annual Community Meeting in 2010, less and less researchers are interested in attending this meeting as it is tailored mostly to the needs of facilities. To improve the connection between microscopy facilities and researchers, WG3 suggests to install a GerBI Expert Forum (GEF) of facility managers that are willing to consult developer groups about new technologies. Working daily with many users on disparate projects, imaging core facility staff can offer a huge knowledge about different imaging techniques. Researchers could apply for such consultation via an open call. A team of four to five facility managers would visit the lab of successful candidates and consult about possible potential biological applications. The call could be subsidized by German BioImaging. In the following discussion most meeting participants regarded the GEF as a very good idea and think it would increase the prestige of this community. Many had been contacted by developers in the past and were asked for their feedback and possible applications for a new technique. Furthermore, an award was proposed for the best new bioimaging technique.

Finally, WG3 will start lobbying for funding for a German infrastructure for biological imaging and will contact DFG to raise the awareness that more calls for core facilities or networks are needed.

3 Summary and Draft of Action Plan for 2013/2014 by Nadine Utz, 11 July 2013, 6 - 7.30 pm

A short planning overview for German BioImaging during and after the DFG project runtime was presented. During the funding period until spring 2015 German BioImaging will produce a *GerBI Best Practice Manual* for setting up and running an imaging facility in Germany, based upon the content elaborated by the workgroups. In early 2014 it will be decided if a follow-up proposal will be filed to DFG and additionally it should be elaborated how GerBI can become a self-sustaining organization.

3.1 Action Plan for workgroups

German scientists in the field of bioimaging are invited to join the German BioImaging workgroups.

Action Plan for WG 1

- Workgroup 1 will have a Skype meeting in the next two weeks and finalise a draft for how to set up and run a biological imaging facility until October.
- Questions from workgroup 1 (e.g. instrument/staff ratio) for the joint survey of all workgroups shall be sent before October.
- Existing literature shall be posted password protected on web page. Nadine Utz will find out if the user login can be used for this purpose.
- Roland Nitschke was contacted by a company and offered a management software deal for many facilities. Interested Facilities shall contact Roland Nitschke.

Action Plan for WG 2

- Workgroup 2 will publish different internal user fee models including examples (without institute names) before November. To this end, the institutes have to be asked if they agree on publishing their cost models. Total costs of a facility can be published as well. User fees for external users can be provided only as password protected documents, which are only available to registered users, due to legal issues.

- Questions for the survey shall be sent to Nadine Utz before October (e.g. Do you charge user fees?, If yes, do you receive user fees?).

Action Plan for WG 3

- Workgroup 3 will start a discussion about an Infrastructure Professorship in fall.
- To intensify the contact to microscopy researchers and developer groups, GerBI will start a consulting project. Researchers can apply through an open call published by GerBI for presenting their techniques to a GerBI Expert Forum and receive feedback on which biological questions can be addressed and how the technique can be transferred and distributed to many users.
- WG3 will lobby for a German infrastructure for biological imaging and get in contact with DFG for this purpose.

Action Plan for WG 4

- Workgroup 4 would like to use a calendar in which courses can be published on the web page. Nadine Utz will take care of technical details.
- GerBI should stay in contact with other national imaging communities and EUBI regarding teaching purposes (Nadine Utz).
- An Exchange programme for facility managers shall be announced this year. It will be subsidized by GerBI. GerBI office will announce it in early autumn on mailing list and web page.
- WG4 will find out which courses organized by microscopy companies would be interesting for the bioimaging community until September and get in contact again with companies afterwards.
- Imaging courses which are mainly meant for internal users can be opened to one external (GerBI) person. For publication the new GerBI web page calendar can be used.
- A course on how to set up a facility was postponed to next year.

Action Plan for WG 5

- Workgroup 5 would like to publish on the web page an online repository for teaching material of microscopy courses, which might be password protected. Nadine Utz will find out how to implement a combined database software and search engine.
- Questions for the survey shall be sent to Nadine Utz before October.
- Refinement of teaching modules and cooperation in this respect with WG4. Focus on basic modules first.

Action Plan for WG 6

- Workgroup 6 will analyse in detail the survey outcome. It will be published on the web page. The community will be informed about it in the next newsletter before October.
- Now that the image analysis needs of microscopists are known thanks to the survey, WG 6 will get in contact with image analysis developers. Can we offer incentives for user friendly software?
- Publish on web page a list of typical and excellent software tools.

3.2 Election of new Steering Committee Member

Jürgen Neumann resigns from the German BioImaging Steering Committee because he will not work any longer as a Core Facility Manager. Stefan Terjung did stand for election and was unanimously elected Steering Committee Member of German BioImaging.

3.3 What is “membership”?

As there is not yet a formal German BioImaging “membership” it is difficult to say how many “members” GerBI is representing. On the web page 47 facilities have registered and via the mailing list 96 interested microscopists are informed regularly. It was agreed on adding the field “number of users per year“ to the new *Facility form* on the web page to know how many facilities and users GerBI is representing. GerBI office will seek expert advice to find out about transforming GerBI into a scientific society or a registered non-profit association, etc. A membership fee was discussed but this option was discarded for the moment.

4 Update on Euro-BioImaging (EUBI) by Antje Keppler, 12 July 2013, 9 - 9.45 am

Euro-BioImaging (EUBI) is an ESFRI (European Strategy Forum on Research Infrastructures) project which aims at the construction of a large scale, distributed, and open access bioimaging infrastructure in Europe. Spurred by EUBI, national imaging communities including German BioImaging were formed in 22 countries. In 2014 EUBI will pass from the preparatory phase to construction phase. The EUBI model foresees flagship technology nodes, multimodal technology nodes, and a coordinating hub. Research projects of potential node users will be selected by their scientific feasibility and excellence. In February 2013, EUBI published the 1st Open Call for Euro-BioImaging Nodes-Expression of Interest. Applications from 71 potential future biological, molecular, and medical imaging nodes (core facilities) including 14 from Germany were received. 2202 Letters of Intent (LoIs) of potential node users were submitted describing a planned scientific project. Applicant nodes were evaluated by an international non-European expert panel and will receive their report soon. Future nodes will provide access to imaging technologies and required services, perform regular user training courses, and support data management and analysis from user's experiments. National investment for the construction of the EUBI nodes is made or planned and EUBI is on the national roadmap in 12 countries (see section 5).

5 Update on the German Roadmap Process and the German Euro-BioImaging Project (GEBI) by Elisa May, 12 July 2013, 9.45 - 10.15 am

In October 2011, nine projects on the ESFRI Roadmap have been called to submit proposals for inclusion in the German national roadmap for research infrastructures. The German biological and medical imaging communities submitted a proposal for a distributed and coordinated national infrastructure for advanced imaging technologies (German Euro-BioImaging, GEBI). On 29 of April, the scientific evaluation by the German Council of Science and Humanities (Wissenschaftsrat) was published. In the Council's report, GEBI received an excellent evaluation with 19 of 20 possible evaluation points and therefore was evaluated as best research infrastructure proposal. Nonetheless, the Federal Ministry of Education and Research (BMBF) did not include GEBI in the German Roadmap for

Research Infrastructures. If GEBI does not receive national funding, the construction phase of Euro-BioImaging will start without German contribution. The GEBI coordinators are in contact with the ministry and GEBI node applicants proposed a joint action in contacting DFG, Max Planck Society, Helmholtz Association, Leibniz Association, and local state governments. German BioImaging sent a letter to Minister Prof. Wanka concerning the roadmap decision with signatures from 40 scientists (see section 2.6).

6 Models for campus-wide imaging facilities serving multiple institutions

by Ivan Baines, 10.45 - 11.45 am

A major goal in Germany and Europe is the better utilization of research infrastructure, which can be achieved by centralizing expensive technologies in core facilities. If multiple institutions are to share infrastructure, for instance a university and a MPI spurred by the excellence initiative or two core facilities build a single legal entity to become a EUBI node, a model must be found that satisfies legal and tax requirements. For the implementation of full costs, all supporting posts such as administration, building, or library are reassigned to science. The institute defines which part of the costs are assigned to user fees and which partial costs are covered by the institute. A challenge for research groups and facilities is that funding bodies have not harmonized their recharge models so that different partial costs are covered by different funding agencies. For a full cost model it has to be taken into account that the real capacity of an instrument (e.g. hours per year) is reduced by maintenance and repair time, unused capacity, and that a steady state capacity is reached after 5 years according to experience (see as well section 2.2). From a legal point of view, a facility can be opened to external users if it is not booked as 100% capacity by internal users. The Excellence Cluster "Dresden Concept" is currently elaborating a model for sharing infrastructure between different institutes with the possibility that no invoices (including VAT) have to be sent to the users. Therefore, an upfront agreement and a subscription on sharing and subscribing to a certain capacity of the centre is needed. At the end of the year a normalization (Spitzenausgleich) can take into account the actual used capacity of each subscriber. The incentive to take part in such a model can be a cheaper user fee as no VAT has to be paid. Further benefits can be given by assigning partial costs differently to user fees. According to the European Fair Competition Law,

it is prohibited to use public funds to subsidize customer service ir-
respectively if the service is delivered to a company or an academic
partner. This means that research collaborations are permitted not
to recover full costs, whereas service must recover full costs.

7 Open Discussion, 11.45 am - 12.45 pm

- Questions were raised concerning instrument/staff ratio. An exact number cannot be recommended, only a range, because it depends on the type of instrument. In the first survey of German BioImaging from 2011 this data was collected and can be used e.g. for negotiations with the administration. For new high end microscopes more man power is needed and this information should be collected again with the upcoming survey.
- How and when can a microscope be put out of operation? A document regarding the period of amortization from the General Accounting Office will be put on the GerBI web page. The suggestion was made that the German BioImaging web page can serve as a recycling point for old instruments. Generally, this is possible but legal issues have to be kept in mind.
- Can user training be charged? When a scientist is trained by the facility but afterwards uses the group's own instruments, the work of the facility staff is not recognized. It was proposed to introduce a training or assistance fee and distribute "user licenses" for the given instrument. This shall be implemented in the user fee models by workgroup 2.

Further discussions addressing topics mentioned in the minutes have been included under the respective sections.

Respectfully submitted, Dr. Nadine Utz
(Project Manager of German BioImaging)