

2015 MASC annual meeting agenda

Date/time: Wednesday, 8th July, 6:45-8:15 pm

(refreshments, snacks, no audio/visual equipment)

Location: Room 202-203, Palais des Congr s, Paris

1. **Welcome** (by Nick Provart)

2. **ICAR**

- Results post ICAR survey 2014 (by Joanna Friesner)
- Update 27th ICAR site June 29th-July 3rd 2016, Gyeongju, South Korea (by Inhwan Hwang) – MASC workshop
- 2017 ICAR site selection – North America (NAASC)?
- 2018 ICAR site selection – Europe – Finland, Sweden, UK?
- 2019 ICAR site selection – Australasia – Wuhan, China?

3. **MASC coordinator / MASC report** (by Luise Brand)

- MASC websites www.arabidopsisresearch.org
 - Updated, MASC members login soon with access to the whole material of MASC coordinator
→ who should get login?
 - Hosting of ICAR websites at MASC subdomain
 - Owner of MASC website after July 2015? Payment by MASC coordinator grant until Dec 2016 secured
- MASC annual report (contributions 2015, survey by NAASC, print 2016?)
- New MASC coordinator Jan-May 2016 – most likely Marilia K.F. de Campos

4. **MASC future subcommittee** (by Nicholas Provart)

- Options for MASC future
→ please read [MASC report Analysis and Recommendations](#)

5. **MASC new appointments**

- Continue annual rotation of MASC chair/co-chair (in case there will be no MASC coordinator?)
 - New MASC chair for 2015/16 Loic Lepinec
 - Proposal for new MASC co-chair 2015/16?

6. **MASC Subcommittees (SC)** - (in case there will be some time left)

- Updates (Bioinformatics, ORFeomics, Epigenomics and Epigenetics, Metabolomics, Natural Variation and Comparative Genomics, Phenomics, Proteomics, Systems and Synthetic Biology)

7. **Open floor**

Notes:

Analysis and Recommendations by MASC

Compiled by Nicholas Provart with input from “MASC Future Subcommittee” members Ruth Bastow, Siobhan Brady, Keiko Sugimoto, Barry Pogson, Ana Cano Delgado, Luise Brand, Joanna Friesner, and Klaus Harter, along with comments from the wider Arabidopsis community.

Coordinating Arabidopsis Research

Let us briefly have a look at the history of coordinating Arabidopsis research. Since 1990 MASC has served as umbrella organization for worldwide Arabidopsis research. During the first decade (1991-2000) of coordinated efforts, researchers from 14 countries collaborated to sequence the Arabidopsis genome. The efforts were mainly led by the North American Arabidopsis Steering Committee (NAASC) and researchers from Australia, Europe and Japan. The second decade was manifested by the functional characterization of Arabidopsis genes through 19 supporting countries. Coordination of such an effort necessitated support by administrative staff. Thus, the role of the MASC coordinator was established in 2002. The MASC coordinator also accompanied and guided the community into the third decade and today 26 supporting countries are part of MASC. This phase can be considered as transition phase for Arabidopsis research because the current challenge is to preserve, develop and translate Arabidopsis research, which is a multifaceted task. The past successes of MASC suggest that maintaining it (via a coordinator position) in the future is something the community should aspire to. It is important to note here that the long-established work of other national and supranational coordinators cannot be underestimated (e.g. those for NAASC, GARNet, AFGN, etc., see below) as they serve as vital hubs and resources and ensure that various mid- and long-term goals are reached. The MASC coordinator's efforts to link these groups has, in the past 13 years, been funded by federal funding agencies i.e. NSF (US), BBSRC (UK) and DFG (Germany) but this is not sustainable as this entails new grant applications to be written every couple of years. In the present funding landscape focusing on translational plant research, it is unlikely that a purely Arabidopsis-focused coordinator position would be funded.

Coordination of the international Arabidopsis community by MASC is achieved through four instruments: (1) the International Conference on Arabidopsis Research (ICAR), (2) the annual MASC meeting, (3) the annual MASC report and (4) the MASC websites. This concept of coordinating Arabidopsis research has proven very successful, and can be reviewed in this current and previous MASC reports.

ICAR Meetings

The first and second Arabidopsis conferences were held in Germany in 1965 and 1976, and then more regularly (either annually or biannually) from 1987 onwards (see page 10). In 2007 it was agreed that the annual ICAR meeting would rotate between three geographical areas (Americas, Europe and Asia). The location for each meeting is determined and agreed via MASC but the organization of each meeting is completely autonomous and reliant upon the activities of the host country. There is no single bank account associated with the ICAR and as a result there is no financial link between each meeting, meaning that there is no mechanism to transfer profits from one meeting to the next one. There is also limited organizational crossover between meetings; current and previous MASC coordinators always pass on their knowledge and assist local organizers where possible, but there is no formal shared organizational structure, website, registration system, or a database of previous attendees. The exception to this situation is when the meeting is held in North America, and organized by NAASC. This is in contrast to other organizations, like International Society for Computational Biology (ISCB), which mounts a big yearly conference on bioinformatics and computational biology (ISMB) at locations around the world.

MASC's Future

The MASC has its origin in multiple countries and therefore it is important to respect and encourage national initiatives to take part in MASC. During the past 25 years several coordinated national Arabidopsis consortia have been established, like the North American Steering Committee (NAASC; since 1992 in the US), GARNet (since 2000, UK) and the Arabidopsis Functional Genomics Network (AFGN; since 2000, Germany). The NAASC and MASC histories are entwined, as the first MASC Coordinator was funded by the US National Science Foundation to simultaneously coordinate NAASC. Only NAASC has managed transform itself into a sustainable not-for-profit organization supporting a part-time coordinator. The NAASC coordinator has been funded, since 2010, via proceeds from every third ICAR, which are organized by the NAASC Coordinator in North America. A major task for the international Arabidopsis community is to develop a new model for a sustainable future for MASC to enable the international community to continue to effectively cooperate and collaborate. In this

respect, during the 25th ICAR in 2014, a “MASC Future Subcommittee” was appointed consisting of senior and junior investigators and Arabidopsis research coordinators from North America, Europe and Australasia.

The MASC Future Subcommittee first assessed the relevant expenses necessary to maintain MASC in its current structure (Table 1); based on this, it considered three support scenarios.

The first was the establishment of a Multinational Arabidopsis Society with an annual membership fee, but informal discussions with the community suggested that there is “society fatigue”, that is, there are already too many societies to which one ought to belong. A society option would have an additional operational load of collecting and managing yearly fees for little perceived community benefit.

The second option would be to seek affiliation with an established national or international organization, like the American Society of Plant Biologists (ASPB, US), the Society of Experimental Botany (SEB, UK) or the Global Plant Council (GPC, Switzerland). The MASC Future Subcommittee members were in close contact with all three organizations in order to discuss the possibilities. Ultimately, it seemed that such an association would not be more beneficial than the third option.

The third option would be for MASC to register as charity or not-for-profit organization with a small executive board in a manner similar to how NAASC functions. This would require a certain amount of seed capital depending on the country of registration (US\$ 2,500-5,500) and additional accounting costs per year (US\$ 500). The registration of MASC as not-for-profit organization would, at the very least, help MASC to stay independent and enable it to carry funds forward to subsequent years, which could help provide surety (down payment) for future ICAR organizers.

The MASC Future Subcommittee would recommend that MASC establishes itself as not-for-profit organization (scenario three). First MASC would have to get sufficient seed capital e.g. contributions from previous ICAR organizers or by fund raising. Second MASC would have to establish a small executive board and a larger members board including representatives from all MASC Subcommittees, Projects and Resources as well as Countries. Third MASC would have to decide about its functional structure, meaning the evaluation of all options from having a MASC

coordinator (50% or less), to a flex-time position where graduate students could help produce the report, with most of the report production devolved to the MASC subcommittees and moving all content online, etc. or even an option of having no MASC personnel.

It should be noted that the current work load to coordinate MASC cannot be undertaken by the research faculty. In case there would be a MASC coordinator in place, who would be funded out of yearly conference profits, it would be expected that the coordinator contributes substantially towards conference organization, in consultation with the local organizing committee, which has primary organizational authority for each ICAR. This would include, for example:

1. Covering some of the upfront costs - to be reimbursed after the conference
2. Organizing registration and abstract submission system
3. Organizing conference website at www.arabidopsisresearch.org or www.araport.org
4. Abstract book assembly in cooperation with local organizers
5. Speaker selection logistics in cooperation with local organizers
6. Fund raising in cooperation with local organizers.

The local organizers would still be responsible for site selection, program and speaker selection, but would work much more closely with MASC than in the past. This would help raise the profile of MASC. The MASC coordinator would also continue to produce the yearly MASC report (with the possibility of charging for advertisements, an activity that is only possible if MASC has an official banking mechanism) and to liaise with country representatives and granting bodies.

In case there is no MASC coordinator it can be expected that the workload for individual MASC members will increase and the coordination efforts will probably be reduced to holding of an annual MASC meeting and preserving a semi-static MASC website. Whether it will still be possible to generate a MASC report, perhaps a shortened version, is up for discussion. The ICAR organization would continue to rely completely on local organizers.

Table 1. Overview of current MASC costs. (*Profits of Australasian and European ICARs; every third year’s profits support NAASC, although some amount might be shared if the MASC coordinator substantively assisted the NAASC coordinator in running the North American ICARs, such as with external fund-raising, which is the source of NAASC’s ICAR profits.)

Item	Costs (estimates US\$)	Funding	Purpose
MASC coordinator (50%)	40,000/year	Profits of ICARs* - increased fund raising to keep fees low	ICAR organization, MASC report, MASC websites, MASC meeting
MASC annual report (print)	3,000/year	Advertising, fundraising in the report	
Public Relations	500/year	Profits of ICARs*	MASC website, posters, flyers...
Travelling costs for coordinator	5,000/year	Profits of ICARs*	Travels to conferences, meetings, workshops...

The MASC Future Subcommittee recommends that MASC in any case reduces duplication of efforts regarding the ICAR organization by establishing an ICAR registration and abstract submission system that is hosted by the MASC websites (either independently at www.arabidopsisresearch.org or at www.araport.org). Currently there is duplication of efforts as every year that year's ICAR website has to be set up *de novo*. How and who will establish this system is up for debate. MASC also will have to decide if it wants to have a unique web interface or would want to host its websites at an Araport subdomain. In order to leverage community resources, we recommend that MASC considers participating in the ASPB and GPC's new Plantae.org digital communication platform for the plant science community to manage outreach and social media activities, depending on the cost of participation.

Finally, the MASC Future Subcommittee wants to point out that careful and considerate discussions have to take place during the 2015 MASC meeting in order to collaboratively create an agreeable solution for the future coordination of international Arabidopsis research.

Ongoing and adjusted road map goals for 2015/2016

The community has made continuous progress on all goals in the five categories as outlined in the road map 2021. Building of the International Arabidopsis Informatics Consortium was completed as well as great progress was made towards the improvement of the recently established Arabidopsis Information Portal (Araport). Currently, we are in the middle of the road map, which means that most objectives are currently ongoing and those are recommended to be continued. Detailed information on progress and recommendations can be found throughout this report and a list of the current and adjusted road map goals can be found below.

(A) Build a predictive mode of an Arabidopsis plant from its molecular parts

Subcommittees (SCs), page 15 ff.; Resource and Stock Centers, page 32 ff.; IAIC and Araport, page 33 ff.; Country reports, page 47 ff.

1. Collect and collate accurate quantifiable data obtained at multiple levels of abstraction (organelle, cell, tissue, organ, organism - genomics, epigenomics, metabolomics, proteomics, phenomics, systems biology)
2. Continue to develop collections of mutants and mutant lines
3. Translation of quantitative data into functional networks computational/mathematical models across scales
4. Develop new research tools and experimental methods to address the lack of global assays for a number of plant processes and fully exploit existing technologies
5. Provide training for plant scientists in computational science and theoretical approaches and encourage further collaboration between plant biologists and theoretical scientists

(B) Exploit the wealth of natural variation that exists in Arabidopsis to further our understanding of adaptation and evolution

SCs, page 15 ff.; IAIC and Araport, page 33 ff.; Arabidopsis Basic Research, page 39 ff.

1. Continue to develop genomic sequencing and computational resources in order to understand and utilize the natural variation of Arabidopsis and related species and to infer biological networks
2. Develop tools and techniques to facilitate the identification of QTLs that have subtle effects on plant genotypes
3. Utilize the information gathered in Arabidopsis and related species to undertake comparative genomics/comparative evolution/comparative ecological genomics
4. Develop appropriate open access informatics and data infrastructure for storage, retrieval and analysis of variation and QTL data
5. Analyze ecotypes and Arabidopsis relatives in association with their rhizosphere, endophyte and epiphyte communities in various ecological settings
6. Develop a multi-scale artificial field model towards natural conditions and develop high-throughput methods for measuring phenotypes in the lab and in the field

(C) Establish an effective knowledge exchange pipeline from the laboratory to the field and vice versa

Progress and Activities, page 9 ff.; SC, page 15 ff.; IAIC and Araport, page 33 ff.; Impact on Applied Research and Industry, page 43 ff.; Country reports, page 47 ff.

1. Undertake the approaches outlined in sections A and B to help us understand important complex traits
2. Promote active dialogue, knowledge and data exchange between plant communities and various fields of expertise
3. Develop a data and informatics infrastructure in which underpinning knowledge generated in Arabidopsis can flow easily to plant breeding
4. Showcase examples of the role of Arabidopsis in rational improvement of plant species for agriculture and other plant-based industries through the annual MASC report and the annual International Conference on Arabidopsis Research (ICAR)
5. Promote exchanges of information and personnel between Arabidopsis groups and those working on other plant species and vice versa
6. Promote knowledge exchange with data providers/users of other model organism communities and facilitate interactions with computational/theoretical researchers

(D) Build the International Arabidopsis Informatics Consortium (IAIC)

Bioinformatics SC page 15 ff.; IAIC and Araport, page 33 ff.

1. Continue to develop Araport; use it to establish widespread use of appropriate data standards
2. Generate an infrastructure that promotes data exchange and collaboration. For example to ensure that integration of data allows users to move vertically between Arabidopsis associated data as well as horizontally to other plant species and model organisms
3. Ensure all data and resources generated are available via the appropriate public data repositories
4. Ensure there is interoperability between the data and resources generated by the Arabidopsis community and those generated by other communities
5. Establish strong links with other data providers/users and computational experts to allow exchange of information and best practice

(E) Deepen international cooperation and coordination

Progress and Activities, page 9 ff.; Analysis and Recommendations, page 11 ff.

1. Continue to represent each country that is undertaking Arabidopsis research around the globe
2. Increase awareness of the richness of international Arabidopsis research via the production and distribution of the annual MASC report and the ICAR
3. Help coordinate international Arabidopsis research to minimize duplication of efforts and maximize efficient use of resources through collaboration
4. Promote open communication and free exchange of data, materials resources and ideas among the Arabidopsis research community
5. Liaise with funding agencies supporting Arabidopsis research
6. Provide coordination for the road map
7. Periodically assess the status of the road map and adjust goals

New goals for 2021 road map:

(E) Deepen international cooperation and coordination

- Develop a permanent online system for International Conference on Arabidopsis Research (ICAR) i.e. registration and abstract submission system
- Establish MASC as e.g. not-for-profit organization to ensure international coordination of Arabidopsis research, to minimize duplication of efforts and maximize efficient use of resources through collaboration
- Better integrate websites, portals and information resources either via www.arabidopsisresearch.org or via a subdomain at www.araport.org
- Participate in the ASPB and GPC's new Plantae.org digital communication platform.

Confirmed attendees:

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