



Congress summary

From 26th April – 1st May 2015, BGCI's 9th International Congress on Education in Botanic Gardens was held in St Louis, Missouri and hosted by Missouri Botanical Garden - a centre for global botanical research, premier horticultural display, exemplary science education, and popular community events.

This is the second time BGCI's Education Congress has been held in the U.S. We were delighted to receive 296 delegates from 34 countries with eight delegates supported to attend the Congress through the Sylvia Scholarship Fund, individual donors and congress revenue. These delegates came from around the world; from Brazil, Kenya, Uganda, Slovenia, India, Colombia and Nigeria.

The theme of the Congress was 'Biodiversity for a Better World: Wild Ideas Worth Sharing'. During the congress week eight keynote speeches, 26 panels, 25 workshops, two world cafés, three poster sessions, 14 tours, a roundtable, a pecha kucha, and a technology showcase illustrated how the public can be engaged with biodiversity issues.

This is the summary of discussions and key points raised during the week themed around the congress key words:

Overarching themes:

Many of the discussions at the congress highlighted the importance of, and need for, more effective sharing of resources, ideas and best practice through strong, ever growing relationships and networks.

Teaching & Learning

The joy of informal education is that it can target people of all ages and can and should be fun for all involved. Many sessions during the Congress highlighted the importance of making connections with art and literature. For example, the Cadereyta Regional Botanic Garden, Mexico are using bucolic tales to engage children with nature. Linking to people's culture and working with artists and writers, and other experts outside gardens, can draw in large, varied, audiences. When it comes to what botanic gardens offer schools, it is important to make links with all aspects of the curriculum as well as encouraging the use of the garden as an outdoor classroom. Hands-on learning was emphasised for all ages. It was suggested that an adaptable framework of fun scientific workshops can be transferred to many audiences, venues or settings. Engaging young children was an important and recurring theme. Natural play and experiential learning were deemed very effective as well as giving children time for reflection and creative thought through debate. Above all was the sentiment that environmental education should encourage behavioural change. The importance of inspiring action, rather than inaction was highlighted. Rather than adopting a top-down approach, the public should be engaged and supported to adopt sustainable and resilient lifestyles.

Science Communication

To highlight their relevance in a changing world, scientific institutions are increasingly being called upon to communicate their research to the general public. Global issues, such as food security and climate change, are particularly pertinent to the work of botanic gardens and hence many gardens focused on science communication during the congress. For example, Botanical Garden of Vilnius University's 'Researcher Nights' offer a space for the public to interact with scientists. From the perspective of content, showing how concepts, such as physiological processes, link to broader systems and concepts was highlighted. It is important to use a variety of media and always ensure

the relevance to people's lives is apparent. Identifying what a community values allows messages to be customised to a local setting. Linking natural sciences to the social science a garden conducts was suggested as an effective way of engaging audiences. The Congress also showcased the practicalities of effective science communication at botanic gardens. For example, training volunteers in science communication from day one ensures it occurs effectively. Botanic gardens that are attached to Universities can access a variety of collaborators to extend a garden's reach to include new audiences.

Technologies for Engagement & Learning

New technologies have great potential in making gardens accessible and encouraging learning. To move with the times and remain contemporary, it is important for botanic gardens to consider, identify and embrace technology which is relevant to them and their visitors. Naturally, discussion at the Congress identified the power of new technology to engage young people and children. As is the case with, the 'Plant Heroes' programme, developed by the American Public Gardens Association to engage young people in protecting plants through interactive, online learning-resources, creative story-telling and citizen science. However, it is also adaptable to use in different ways with different audiences and can provide interpretation which is tailored to a particular visitor's interests. Social media was discussed as an effective strategy to reach teenagers during and after projects they are involved in the garden. This can be aided by tools such as Hootsuite that simultaneously update all social media platforms. Also highlighted was the importance of remembering that some visitors may prefer not to use technology during their visit and that, as well as funding and equipment, it is essential to allocate staff time and the appropriate expertise to designing technology for public engagement, e.g. location-based mobile games and ensure philosophies about learning are not forgotten.

Strategy & Future Vision for Greater Impact & Change

The discussion related to strategy and future vision, can be broadly broken down into two themes:

Organizational issues within botanic gardens: Creating links between staff and departments was deemed essential for the future. There is a perception of an attitude towards working in silos in botanic gardens. There is a need to work across these and encourage dialogue. Also, the need for diversity was highlighted. To ensure that botanic gardens are inclusive institutions their leadership, staff and volunteers need to be as diverse as possible.

Networks and sharing best practice: There was also much discussion around communication between institutions. The idea of a network or centralised system for sharing best practice was raised again and again. This would encourage long term legacy of multinational projects, e.g. the EU funded INQUIRE project offering teacher training on inquiry-based science education, and support the development of gardens as innovative sites of informal education. However, this is not an easy task since botanic gardens around the world are very diverse in terms of roles, foci, organizational structure and affiliation to wider institutions. This creates a challenge for developing and implementing a common strategy. To improve the education being provided, it is also important that gardens are more active in participating in educational reform efforts and evaluate their activities so that they can prove the impact of their work.

Social Inclusion & Community Engagement

Attracting hard-to-reach audiences and engaging with communities for their and the gardens' benefit is one of BGCI's main focuses, with the Communities in Nature initiative now forming an underlying ideology for all of its education work. It was apparent, from the Congress, that many gardens are also dedicated to this area of work. As well as a call for BGCI to develop principles and ways of working with communities for the gardens' sector to adhere to, to support them to develop a social role, there was discussion of creative methods for engaging diverse audiences. This included events, free days and other activities. For example, oral history, as demonstrated by Cambridge University Botanic Garden's project, 'Voicing the Garden'. Active involvement of communities and co-creation was emphasised as an important way to engage communities and ensure their needs are met. This necessitates the collection of visitor data as well as communication with potential new audiences. In order to successfully deliver such activities requires all levels in a botanic garden, including senior management, to understand and commit to education programmes as a form of

community outreach and service and not just a revenue generator. Furthermore, It is important to engage with indigenous and local communities when determining how best to respond locally to climate change and conserve indigenous knowledge.

Research & Evaluation

Effective research and evaluation are essential to improving the education offer of botanic gardens, learning from previous projects and each other. Hence, it is good news to discover during the congress that PhD social science research is being conducted in botanic gardens, e.g. at Royal Botanic Gardens, Kew and Xishuangbanna Tropical Botanical Garden. The congress showcased some important findings of current research happening in botanic gardens. For example, when a botanic garden only uses plant labels as a science communication method, visitors develop a negative perception of plant science as an activity that is not relevant to them and to which they do not have access. At Royal Botanic Gardens, Kew, research has shown that live interpretation is most effective as a science communication method. What is now important is how the gardens will use these results. The congress also provided a forum for sharing techniques for research and evaluation. Suggested evaluation methods include coding behaviours and matrixes (meeting a list of pre-specified criteria), anecdotal evidence is also valuable, social media and providing incentive to encourage teenagers to complete evaluation surveys is important.

Professional Development

Professional development is an essential aspect to improving the educational offer of a botanic garden or in producing the professionals of the future. When it comes to providing training to horticulturalists of the future, the Congress highlighted some of the main challenges. These being balancing the theoretical and practical aspects, delivering consistent and unique work experience with seasonal/weather changes and, more broadly, offering a uniform programme that will cater for everybody's needs as participants who enter programmes have different backgrounds and experiences. A way suggested to enhance professional development was through extending staff and student exchange programmes to other regions, since this can offer benefits beyond the programme content, e.g. cultural and social.

Key Congress thoughts:

- Free play in botanic gardens can be achieved easily without expensive resources.
- Communicating climate change is often regarded as complicated. Identifying what a community values is important to customize messaging about local impacts and solutions to climate change effects.
- There is a need for a centralized system/database with information on training courses and staff exchange opportunities for professional development.
- Establishing dialogue between educators and horticulturists early in any proposed collaboration or project needs to be achieved, so that a sense of joint-ownership of the collaboration is part of the 'working-together' process. Such cooperation needs to be on the basis of open, supportive, respectful and peer-to-peer dialogue and relationships, but is most productive if achieved within an institutional framework, where such cross-divisional or cross-departmental collaboration is promoted, encouraged and managed.
- Alternative histories come alive through gathering oral stories of people who love the garden.
- Engagement of communities in projects with botanic gardens should be genuine. Communities should be invited as partners and not as consumers and when communities contribute with their indigenous knowledge to botanic gardens' work access and benefit sharing processes should be put in place.
- When developing community projects, fundraising is a long term process and it is important that the community partners are involved from the beginning including having an active role in raising funds.
- There is a need to work across silos within botanic gardens to provide rich interpretation.
- It is important that botanic gardens make use of the results of evaluation and research. Technical resources are available for developing online and computer mediated teaching, but it is more difficult to identify people for content development.