



DivSeek Connect

Official Newsletter of DivSeek International Network

Issue 4, December 2022

Dear Reader,

As 2022 draws to a close, we are preparing for our in-person AGM and the Plant Animal Genome conference (PAG 30) in San Diego for the first time in a few years.

We look forward to seeing many of you there – not only for the DivSeek AGM on Thu 12 January, but also at our PAG 30 workshop and follow-on social gathering on the Friday, and at other times during the conference.

Along with other meetings planned in the next 12 months, we think this is a great opportunity to engage in productive discussions about where DivSeek is best placed to extend its network interactions and make a difference in 2023 and beyond.

For our AGM we are keen to showcase updates from as many Member organizations as possible, so please send your 3-minute ‘flash-talk’ titles to info@divseekintl.org with ‘AGM flash’ in the title.

Executive Director, Graham King

This issue:

DivSeek in San Diego	2
Looking back at key achievements from the Ninth Session of the Treaty’s Governing Body (GB 9)	3
Workshop resources from TropAg / Harlan IV	5
From Genome to Phenome: how AG2PI is building bridges between kingdoms	6
How (and why) do we grow agricultural productivity? Lessons from the SPG Coalition’s 2022 events	7
Upcoming Events	8

Did you know?

The DivSeek website is now available in 16 languages. If you’d like another added, please contact info@divseekintl.org

DivSeek in San Diego January 2023



AGM and Community Update

Thu 12 Jan 2023	Courtyard by Marriott, Hotel Circle
Noon – 4pm	Draft Program: <ul style="list-style-type: none">• Arrive, buffet lunch provided• Board report (Stephen Kresovich), Finances (Chris Knihnitski), Operational update (Graham King)• Member/community updates: 3-minute Flash Talks• Break• MOU with International Treaty (Daniele Manzella, ITPGRFA)• Members' open-floor discussion

PAG 30 Workshops

Fri 13 Jan 2023	Pacific Salon 3 – 4, Town & Country Workshop: Information flows to harness plant genetic diversity
4:05PM	Divseek Commons : Open Data, Analysis Tools and Best Practices for Plant Genetic Resources (Graham King)
4:25PM	Genesys PGR and Management of Genebank Accession Information. (Matija Obreza, Crop Trust)
4:45 PM	West Africa Centre for Crop Improvement, University of Ghana – Training Next Generation Plant Breeders in Africa for Food and Nutrition Security in Africa (Eric Danquah, WACCI)
5:05PM	Germinate: A Common Platform for Management of PGR Experimental Data (Paul Shaw, JHI)
5:25PM	Divseek Hubs Representing the Community of Practice for Latin America (Monica Carvajal-Yepes, Bioversity/CIAT)
5:45PM	Interoperable Platforms for Adding Value to Plant Genetic Resources (Sarah Dyer, EBI)
6 – 7:30 PM	Pacific Salon 3 – 4, Town & Country Informal community gathering, refreshments
Sat 14 Jan 2023 10:30 – 12:30	Pacific D, Town & Country Workshop: Genomics of Genebanks

Looking back at key achievements from the Ninth Session of the Treaty's Governing Body (GB 9)

The future food security of our planet rests upon our capacity to conserve and sustainably harness crop genetic diversity. Scientists and policy-makers around the world are tasked with developing the knowledge infrastructure and governance systems that ensure plant genetic resources (PGR) are well managed for future generations.

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA or Treaty) holds a central place in the global governance of agricultural plant genetic resources. The Treaty's Governing Body typically meets every two years, with representatives from all 149 signatory countries coming together to support the implementation of the Treaty.

During these sessions, the Governing Body may provide policy direction and guidance; adopt new plans and programmes; establish subsidiary bodies to address specific issues; or consider and adopt amendments to the Treaty.

This year, the Ninth Session of the Governing Body (GB 9) was held in New Delhi, India in October. DivSeek Board member Yasmina El Bahloul, who chaired the session, regarded GB 9 as a success.



Image credit: Press Information Bureau, Government of India

“One of the key outcomes from the session was re-establishing the Working Group dedicated to the Multilateral System,” explains El Bahloul. “Besides this, there was a strong focus on promoting the use of DOIs, building capacity for use of DOIs in developing countries, and continuing to promote and disseminate capacity development workshops on farmers’ rights.”

A Working Group for the Multilateral System

Many regarded the main achievement of GB 9 to be the re-establishment of a Working Group to enhance the functioning of the Treaty's Multilateral System (MLS) of access and benefit-sharing (ABS).

Under the Treaty's MLS, signatory countries agree to make their genetic diversity and related information about the crops stored in their public gene banks available to other signatory countries. In 2018, the MLS comprised a pool of genetic resources for 64 of the world's most important crops, with 2.5 million accessions.

Three years ago, GB 8 was unable to reach consensus on measures to enhance the functioning of the MLS, nor agree on a formal intersessional process to continue deliberations. GB 9 managed to re-establish an open-ended Working Group, and agreed on its aims and terms of reference.

Focus on farmers' rights

Another major focal point was addressing issues relating to farmers' rights. This fell in line with the session's theme: 'Celebrating the Guardians of Crop Diversity', which sought to recognize the contribution

of smallholder farmers to the conservation of plant genetic diversity.

An *ad-hoc* Technical Expert Group on farmers' rights was formed during previous sessions. At GB 9, The Group presented an updated inventory of national measures and best practices, drawing attention to a set of [options for encouraging, guiding, and promoting the realization of farmers' rights](#). Notably, the Governing Body agreed to convene a global symposium to explicitly address these rights. The symposium will be hosted in India.

Linkages with the Convention on Biological Diversity

GB 9 explicitly considered the close linkages between the Treaty and another major international agreement: the Convention on Biological Diversity (CBD). This was particularly timely, since the second phase of the Fifteenth Meeting of the Conference of the Parties (COP) to the CBD (COP15, due to take place in Montreal in December) is expected to adopt a post-2020 global biodiversity framework (GBF).

Delegates discussed how the Treaty and its community could contribute to the GBF, noting that [the first draft](#) includes targets, goals, and indicators of direct relevance to the Treaty. They also addressed issues relating to cooperation with the CBD broadly, and on the Nagoya Protocol in particular.

This included the thorny issue of digital sequence information (DSI) and benefit-sharing mechanisms related to its use.

Opportunities for DivSeek

As a knowledge broker for the plant genetic resources community, DivSeek has an important role to play in disseminating information and developing best practices that are consistent with the Treaty and CBD.

In May this year, DivSeek signed an MOU with the Treaty that sees both parties working towards a common goal of enhancing the global exchange of germplasm information and promoting benefit-sharing.

"DivSeek and the Treaty work towards the same ends to ultimately guarantee the conservation and sustainable use of PGR," says El Bahloul. "DivSeek's role in this context is to disseminate information and encourage development of technical standards within the international regulatory framework for food and agriculture."

The next session, GB 10, will take place next year in Rome, Italy. "One of the main challenges to be addressed will be reducing the gap between developed and developing countries," says El Bahloul. "I expect there will also be a strong focus on enhancement of the MLS, farmers' rights, and DSI."



Image credit: ITPGRFA

Missed the Harlan IV symposium? Get our workshop resources here

Recently, the fourth international Harlan symposium was held in Brisbane, Australia. The symposium ran alongside TropAg, a conference on tropical and subtropical agriculture.

The Harlan symposia are dedicated to the origins of agriculture and the domestication, evolution, and utilization of genetic resources.

They are named in honour of Jack R Harlan, an American botanist and agronomist whose seminal work 'Crops and Man' (1975) continues to inspire generations of plant breeding students.

Harlan is recognised for articulating the importance of the relationship between the activity resulting from human development and the evolution of agricultural biodiversity.

Fittingly, Harlan IV and TropAg comprised a program of speakers, workshops and symposia sessions reflecting the theme that science, technology and society can steer the future evolution and utilisation of crop genetic diversity.

This included a workshop hosted by DivSeek, and co-organised with Sally Norton of the Australian Grains Genebank, entitled *Plant Genetic Resources – Initiatives to Harness Biodiversity and Increase Utility*.

The presentation slides from this workshop are now available on our website. Whether you attended our Harlan IV workshop and would like to revisit the content, or were unable to attend the symposium, all resources are available [here](#) (or by scanning the QR code to the right).



Key Highlights from HarlanIV / TropAg

- Professor Andrew Lowe and Colette Blyth: [Introducing the DivSeek Australasian Hub](#)
- Dr Sally Norton, Australian Grains Genebank, Australia: [Genebank perspectives on improving efficiencies through using omic technologies](#)
- Prof Pankaj Jaiswal, Oregon State University, United States: [Coordination of information platforms to support use of plant genetic resources](#)
- Dr Katharina Nargar, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia: [Collection genomics: Rapid assessment of wild diversity and advances with target capture](#)

From Genome to Phenome: how AG2PI is building bridges between kingdoms



Written by Kiri Marker in collaboration with Carol Brown, AG2PI Communications Coordinator

When it comes to tackling problems as complex and urgent as securing global food security, our research communities have no choice but to become more interdisciplinary.

Let's take genome-to-phenome (G2P) science, for example. Understanding how the physical properties of a crop connect back to its genetic code, and disentangling the influence of the environment on its genes, is a complicated undertaking. It requires collaboration between farmers, geneticists, plant physiologists, and data scientists.

Actually translating this research into real-world solutions for our food production systems is an even greater undertaking – one that requires the G2P research community to join forces with the likes of engineers, economists, and social scientists.

The Agricultural Genome to Phenome Initiative (AG2PI) was born from a need for this type of collaboration. Established by the U.S. Congress in the 2018 Farm Bill and funded through USDA NIFA, the goal of the AG2PI is to support collaboration in G2P science as it relates to agriculturally important species.

In particular, AG2PI seeks to bridge the gap between crop and livestock science. More often

than not, researchers stay within their own plant or animal kingdom, and often within their own species. AG2PI aims to build a cross-kingdom G2P research community.

One of the ways they are doing this is through education. To date, AG2PI has hosted over 20 virtual field days across the crop and livestock domains, with topics including microbiomes, omics, complex modelling, and data storage and standardization. Field days take place online rather than in the field to accommodate a larger, more diverse audience and typically follow a presentation and discussion format which still allows for interaction between attendees and presenters.

They have also held 15 virtual training workshops that offered deeper exploration to build technical capacity in cyberinfrastructure, data tools and pipelines, computational skills and more. Recordings for past training workshops and field days are freely available via YouTube and through the AG2PI website (ag2pi.org).

Patrick Schnable, AG2PI Principal Investigator, says that these field days and workshops have “not only assisted individual researchers improve their skills, but have also helped to build the AG2PI community”.

Alongside training and information sharing, AG2PI also fosters collaboration by awarding seed grants to collaborative G2P projects. “The new knowledge, educational resources, and data pipelines the awardees are developing and freely sharing is another big value-add to the community,” says Schnable.

Excitingly, AG2PI have recently been awarded their third grant through USDA NIFA to continue these seed grant programs. Schnable explains: “with an added \$1.6 million devoted to seed funding, we recently published an RFA to support AG2P-related projects with budgets of up to \$250,000.”

Details about these grants can be found on the AG2PI website (<https://www.ag2pi.org/seed-grants/coconut-seed-grant-2022-10-28/>).

How (and why) do we grow agricultural productivity? Lessons from the SPG Coalition's 2022 events

The USDA's Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation (SPG Coalition) was launched in 2021 at the [UN Food Systems Summit](#).

The [SPG Coalition](#) is a voluntary coalition of action whose members aim to accelerate the transition to more sustainable food systems through a holistic approach to productivity growth. DivSeek International Network is an SPG Coalition member, and has the opportunity to interact with the wider membership base that comprises many exciting initiatives and projects aimed at enhancing agricultural sustainability through innovative science and data-driven solutions.

The Coalition provides a platform for sharing and disseminating information about best practices, lessons learned, and innovative, evidence-based approaches for sustainable productivity growth. To this end, the Coalition hosted a series of stimulating [events](#) throughout 2022. This included a [global conference](#) which coincided with the release of the [2022 Global Agricultural Productivity Report](#). This report found that growth of global agricultural productivity is in steep decline, and that annual increases from the current low of 1.12 percent to 1.73 percent per year would be required to feed the world in 2050.

The conference, entitled *Accelerating Agricultural Productivity Growth for a Sustainable, Resilient World*, was held on October 4, 2022. It included a detailed presentation of the Report, a panel discussion of broad strategies to reverse system trends, and presentations about mobilizing action. A 3-hour livestream video is available [online](#) (by following the QR code).



SPG COALITION
Sustainable Productivity
Growth Coalition

For Food Security and Resource Conservation

Another notable event was the webinar titled *Sustainable Agricultural Productivity Growth: COP 27 and Beyond*, which focused on the role of agricultural productivity growth for feeding the world while simultaneously reducing greenhouse gas emissions.

The webinar featured four speakers, each of whom presented new evidence underscoring the importance of agricultural productivity growth for climate change mitigation and adaptation. A [two-page synopsis](#), as well as a [1-hour livestream video](#), are now available.

Both events included excellent big-picture conversations about the need for agricultural productivity growth. There was a notable focus on growing total factor productivity (TFP), which means producing more food, but with fewer inputs – including land, water, labor and capital.

Speakers from diverse fields (economists, policy analysts, and data scientists) provided thought-provoking and data-driven analyses on the relationship between TFP and sustainable social and environmental development objectives.

As a member of the SPG Coalition, DivSeek welcomes engagement from any of its Members and Partners in proposing solutions and initiatives related to these events. In particular, there are opportunities to inform the conversation by identifying contributions based on characterization and harnessing of plant genetic resources.

Upcoming Events



AgBioData

Sign up for AgBioData Working Groups (Year 2)

AgBioData are initiating six new working groups on agricultural data-related issues. To sign up, fill out this [Google Form](#) by December 10th, 2023.



Convention on Biological Diversity

United Nations Biodiversity Conference (COP 15)

7 – 19 December, 2022
Montreal, Canada

The second part of COP 15 will see the adoption of the post-2020 global biodiversity framework. More information at cbd.int/conferences/2021-2022.



DIVSEEK
INTERNATIONAL
NETWORK INC.

DivSeek AGM

12 January, 2023
San Diego, USA

Our next AGM will take place in-person, in alignment with the [Plant and Animal Genome Conference](#). See page 2 for details.

DivSeek PAG 30 Workshop

13 January, 2023
San Diego, USA

This workshop will feature six diverse speakers harnessing information flows for plant genetic diversity. See page 2 for details.



International Galaxy Community Conference (GCC2023)

24 – 27 April, 2023
Padova, Italy

This annual gathering of the [Galaxy](#) community includes training, talks, posters, demos, Birds of a Feather meetups, and many other opportunities for collaboration and networking. More information at biocommons.org.au.



AG2PI Conference

15-16 June, 2023
Kansas City, USA

The AG2PI Conference will include talks by community thought leaders, stakeholder roundtables, small group discussions, and networking opportunities, all designed to map the future of AG2P research. Registrations expected to open in February 2023. More information at ag2pi.org.



16th International Biocuration Conference

July 2023
Brisbane, Australia

A unique event for curators and developers of biological databases to discuss their work, promote collaborations, and foster a sense of community. More information at biocuration.org.



**DIVSEEK
INTERNATIONAL**
NETWORK INC.

Call out for Newsletter Contributions

We are keen to receive any content, short or long, from Members and Observers, organisations and individuals. We welcome your news updates, opinion pieces, research abstracts and upcoming conferences.

Contact info@divseekintl.org with 'Connect' in the email subject.

DivSeek International Network Inc.

421 Downey Rd | Saskatoon, SK S7N 4L8 CANADA | +1 306-966-3707

Copyright © 2022 DivSeek International Network Inc. All rights reserved.