



Seed Innovation Systems for the 21st Century

9-13 August 2021

Abstract Submission is open!

We are pleased to invite you to submit abstracts for presentations at the 13th Triennial ISSS Conference which will be held online on 9-13 August 2021.

The theme of the 13th Triennial Conference is 'Seed innovation systems for the 21st century' and the program will cover all aspects of seed science, from the fundamental science underlying seed development, germination, and lifespan through to applied research and the development of cutting-edge technologies that will transform conservation and seed production. Through a series of invited and contributed talks and thematic discussions, this world congress aims to review the current state of the art in seed science and develop a roadmap for priority research in the future.

Abstracts are invited for oral presentations across the five conference themes. Oral presentations will be 12 minutes with 3 minutes for questions. Abstracts not accepted for an oral presentation may be selected for a lightning talk (5 min inc. questions) or poster presentation (format to be confirmed).

The deadline for abstract submission is **28th May 2021**.

Themes:

1. Seed memory – how environment influences traits during development

Seed development is highly sensitive to the maternal environment with subsequent impacts on seed quality traits (longevity, germination, quality/vigour) and internal chemistry. But which molecular and biochemical signalling networks control seed responses, are they quantifiable, do they provide prediction of adjustments to climate change and how long are they imprinted on subsequent seed performance?

2. Seed life span – the science of maximising survival

Lowering moisture and temperature is the basis for extending seed lifespan. Except some species produce seeds that are drying sensitive; and for seed that tolerate desiccation, conventional seed storage (dry at -20°C) for the long term is a possibility but not a probability. Changing the physical environment, such as lowering temperature (cryobiotechnology), is one intervention to enhance seed lifespan, but can genes for longevity be understood and manipulated, can survival be chemically extended, and can the physical environment be optimised for each species? Moreover, can a mechanistic understanding of seed desiccation intolerance take us closer to making a recalcitrant seed orthodox for storage?

3. Seed innovation systems for the 21st century – the future of seed science (local to global)

The natural traits of the wild relatives of the world's main crops make them potential sources of genes and adaptive traits for agriculture. Beyond this narrow focus, other species offer exciting possibilities for new medicines, fibre plants, and other uses. But which species are being and should be evaluated for such traits and who owns the intellectual property? For those already identified for potential exploitation, do key policy frameworks help or hinder access to the seed genetic resources around the world; and in any case can the seed supply chain meet the projected long-term sustainable use? For species already in the supply chain rapid developments in 'omics' technologies through to large scale, automated production facilities for phenotyping are changing the outlook for seed science research. But looking forward, which innovations are needed soonest, will have the greatest impact on the seed trade and help seed scientists address the greatest society challenges?

4. Seed form and function – the morphology of success

“Their problems of form are in the first instance mathematical....and their problems of growth are essentially physical problems” (D’Arcy Wentworth Thompson, 1917), so which mathematical and physical rules govern the form and function of seeds across the Plant Kingdom and what insights are revealed about the evolution of seed traits, including dormancy, that might contribute to species success?

5. Seed germination and stress – environmental thresholds and species resilience

Seeds commit to germinate over a species-specific or seed lot-specific set of environmental conditions, delimited by thresholds. But when they fail to germinate beyond these thresholds are they dormant, under stress or held in suspended animation; and do such responses tell us something about species resilience and niche competitiveness?

Guidelines for abstracts:

Before preparing your abstract, please read the **Terms and Conditions** below. Your submission will be considered as agreement with the Terms and Conditions.

Please prepare abstracts as follows:

- Title (maximum of 20 words).
- List all authors (first name and surname) with presenting author underlined.
- List affiliation of all authors including Department, Organisation, City and Country as appropriate.
- Email address of presenting author.
- Abstract text (maximum of 300 words excluding title, author list and affiliations).
- Preferred conference theme (1. Seed memory, 2. Seed life span, 3. Seed innovation systems, 4. Seed form and function, 5. Seed germination and stress).
- Save your file, preferably as .docx, with filename: theme_surname_first name.docx, e.g., 4_smith_jane.docx
- Send your abstract as an attachment by email to iss2021@kew.org by 5 pm UTC+1 on 28th May 2021.

Terms and Conditions:

- Receipt of abstracts will be acknowledged by email within 3 working days.
- By providing us with your submission, you consent for Royal Botanic Gardens, Kew to send your personal data (your name, affiliations and email address) alongside your submission to a committee of international reviewers. This will mean that your information will be shared outside of the United Kingdom. Countries include Argentina, Australia, Brazil, Denmark, France, Netherlands, Pakistan, and USA. If you have any concerns, please [contact us](#).
- Notification of abstract acceptance will be by 30th June 2021.
- Guidelines for presenters will be issued upon abstract acceptance.
- Accepted abstracts will be included in an electronic abstract book and author names, affiliation(s), and presentation title will be published in the conference programme on kew.org.
- The presenting author of a selected abstract will be required to register for the conference (fees below). Any author not registered by 16th July 2021 will have their presentation removed from the programme.
 - ISSS member: £100
 - Non-member: £150
 - ISSS student member: £50
 - Student non-member: £75
 - Low or lower-middle income countries: FREE
- Final presentations will be sent to conference organisers as PowerPoint files no later than 26th July 2021.
- Presenters will be responsible for ensuring that they have the appropriate equipment to deliver an online talk such as webcam, microphone and adequate internet connection. Further details will be issued upon abstract acceptance.
- Presentations may be pre-recorded by the presenter. Recorded presentations will need to be sent to conference organisers by 26th July 2021 so that audio and video quality and timing can be checked. Presenters should be available for live Q&A even if their presentation is pre-recorded.
- Presenters will need to attend at least one rehearsal session prior to the conference. These will be scheduled in the three weeks before the conference.
- Conference sessions will be recorded, and recordings will be available to conference attendees. By providing us with your submission you consent for Royal Botanic Gardens, Kew to record your presentation and make it available to conference attendees via Zoom Webinar and as unlisted content on YouTube.

If you have any questions or would like further information, please email isss2021@kew.org.

We look forward to receiving your abstract submissions.

Best wishes,

Dr Louise Colville and Prof Hugh W. Pritchard

On behalf of the ISSS 2021 Organising Committee