



ISSCT Biology Commission - Molecular Biology Section Webinar

The International Society of Sugar Cane Technologists (ISSCT) is pleased to invite you to a webinar on recent advances in sugarcane molecular biology to be held on:

Thursday 25 June 2026 from 11 am to 1 pm GMT

Theme: *Molecular and Biotechnology Approaches Shaping the Future of Sugarcane*

This webinar will highlight how molecular biology is increasingly enabling practical solutions for sugarcane improvement across diverse production environments.

Chaired by John Riascos (Chair of ISSCT Molecular Biology Section) with presentations as follows:

Presenter / Country / Organisation	Presentation Title
Dr Sandy Snyman, South Africa / SASRI	*Sweet science: Unlocking sugarcane genetic potential in South Africa.*
Dr Jordan Dijoux, Réunion Island / eRcane	*Understanding and improving genetic resistance to orange rust in sugarcane.*
Dr Brennan Hyden, Brazil / CTC	*New traits at CTC: Progress towards doubling sugarcane yield by 2040.*

The presentations will focus on integrating molecular tools and breeding strategies to enhance productivity, resilience, and sustainability in sugarcane.

Format of the webinar:

- 20-minute presentations.
- 5-minute Q&A after each presentation.
- 20-minute panel discussion with all speakers.

Total duration of the session will be approximately 2 hours.

The programme, including speaker biodata and presentation summaries, is provided below.

The facilitators/organizers are:

- Dr. Francisca Perera, EEAOC, Argentina
- Dr. Nathalie Piperidis, SRA, Australia
- Dr Jianping Wang, UF, USA
- Dr. Olivier Gasmeur, CIRAD, France
- Dr. John Riascos, CENICAÑA, Colombia

Language
The Webinar will be conducted in English.

Registration
The Registration Form for the Webinar may be accessed through the following link:
https://us06web.zoom.us/meeting/register/5GmdYTS2RMOljm4DPvy-HA

The Webinar is open to ISSCT compliant members as well as to non-members.

Compliant Members
Compliant members are those who have already settled their membership dues for the period 2025-2028. For those who have not yet done so, they may settle their dues of USD 150 through the following link:
https://members.issct.org/appform/issct_guatemala_2028.aspx

Non-Members
To register only for the Molecular Biology webinar, participants must pay a USD 50 registration fee via the following link:
https://members.issct.org/webinar/overview.aspx

After payment of either ISSCT membership dues or the webinar registration fee, participants will receive an email with access details (username and password).

Further information
For further information, please contact the ISSCT **Molecular Biology Chair –** John Riascos jjriascos@cenicana.org or the ISSCT Secretariat at issctsecretariat@gmail.com / issct@intnet.mu

ISSCT Molecular Biology Section Webinar

Programme

Thursday 25 June 2026
11 am to 1 pm GMT

Chair: Dr John Riascos

Speaker 1: 11 am GMT – 11:20 am GMT

Dr Sandy Snyman (SASRI, Durban, South Africa)

Biodata

Dr Sandy Snyman, the South African Sugarcane Research Institute's (SASRI) Principal and National Research Foundation (NRF)-rated Scientist, Variety Improvement Programme Manager, has been instrumental over nearly four decades in advancing sugarcane biotechnology through stakeholder-driven research. SASRI has implemented the NovaCane® technology she developed to micropropagate varieties, and her research into cryotherapy has advanced disease elimination and germplasm conservation, enabling wider adoption of new varieties. Her contributions to genetic modification and mutagenic breeding ensure sugarcane growers have access to innovative solutions for sustainable farming. Dr Snyman serves the global sugarcane community as the South African Sugar Technologists' Association (SASTA) Vice President and South Africa's International Consortium for Sugarcane Biotechnology (ICSB) representative. Through an honorary appointment at the University of KwaZulu-Natal (UKZN) and other SASRI-funded projects, she has been involved in the supervision of 19 postgraduate students and her 40 international publications have contributed to real-world agricultural solutions.

Sweet science: Unlocking sugarcane's genetic potential in South Africa.

Commercial sugarcane has a complex polyploid genome, which represents challenges to conventional breeding approaches. The grower- and miller-funded South African Sugarcane Research Institute (SASRI) has a 100-yr history that began by breeding for local agroclimatic regions. Biotechnology for cultivar improvement was introduced in the early 1990's. This presentation focuses on biotechnology-related interventions that have supported sugarcane research and resulted in SASRI-bred N cultivars being widely grown in many sub-Saharan African sugarcane-growing countries and will include:

1. Micropropagation and germplasm storage.
2. Cryobiology and virus elimination.
3. Mutation breeding.
4. Genetic modification.

Speaker 2: 11:25 am GMT – 11:50 am GMT

Dr Jordan Dijoux (eRcane, Réunion Island)

Biodata

Jordan Dijoux is a breeder at eRcane, the sugarcane breeding center of Réunion. He specializes in phytopathology, focusing on improving disease resistance in sugarcane by studying major diseases such as smut, leaf scald, and rusts.

Jordan earned his agronomy engineering degree from Institut Agro Montpellier (France), where he completed his final internship on the emergence of sugarcane orange rust in Réunion. He continued this work during a PhD hosted at eRcane, in collaboration with Cirad, and received his doctorate in plant-pathogen interactions from the University of Montpellier.

His doctoral research focused on the sugarcane–orange rust pathosystem, investigating the disease's impact on yield, the genetic basis of host resistance, and the global genetic diversity of the pathogen.

Understanding and improving genetic resistance of sugarcane to orange rust

Sugarcane orange rust, caused by *Puccinia kuehnii*, is an emerging disease of increasing concern in many sugarcane-growing regions worldwide. Developing resistant commercial varieties remains the most effective and sustainable control strategy. Understanding the genetic basis of resistance is therefore essential for improving breeding approaches.

This presentation will highlight recent research conducted in Réunion using a large association panel of 568 genotypes. Genome-wide association studies (GWAS) identified six quantitative trait loci (QTLs) associated with resistance, most of which originate from *Saccharum spontaneum*. These results provide valuable insights and practical tools to support the development of high-yielding, rust-resistant sugarcane varieties through marker-assisted selection. They also emphasize the key role of wild germplasm, particularly *S. spontaneum*, as a reservoir of resistance genes.

Speaker 3: 11:50 am GMT – 12:10 apm GMT

Dr Brennan Hyden (CTC, Brazil)

Biodata

Brennan Hyden is a Plant Trait Scientist at CTC Genomics, the North American subsidiary of Centro de Tecnologia Canavieira in Brazil. Prior to joining CTC, he received his Ph.D. in Plant Breeding and Genetics from Cornell University, where he conducted his dissertation research from 2018 to 2023 in bioenergy shrub willow and the mechanisms of dioecy. He received in B.S. in agricultural biotechnology from Washington State University in 2017, where he studied light signaling in *Brachypodium* for three years. He is the primary author on five manuscripts, including publications in New Phytologist and Horticulture Research. For the last three years, he has worked on a discovery team at CTC and has led projects spanning a variety of areas, including disease resistance, herbicide tolerance, vector technologies, and genomic analysis in sugarcane.

He previously presented at the International Plant and Animal Genome conference (PAG) in San Diego, USA and at the ISSCT Breeding and Molecular Biology workshop in Coimbatore, India.

New traits at CTC: Progress towards doubling sugarcane yield by 2040.

We present the recent developments and efforts at Centro de Tecnologia Canavieira (CTC) to double sugarcane production in Brazil by 2040. To that end, CTC has completed the development of a new biotech technology – VerdePro2, with stacked borer and herbicide tolerance, designed to increase productivity, adaptability, and field performance. We provide an overview of the platforms and technologies being deployed by CTC to accelerate trait and variety development, including breeding, biotechnology, and synthetic seeds. In particular, we discuss the ongoing trait discovery efforts being undertaken by teams in the United States and Brazil, including work on engineering herbicide tolerance, sugarcane weevil resistance, and drought tolerance. Finally, we present CTC's advancements in vector design and technologies, along with unique and key considerations for trait expression and efficacy in sugarcane, such as advancements in transformation efficiency, the development of tissue specific promoters, and the application of signal peptides. Taken together, these developments underscore the rapid advancement in technology within the sugarcane industry and demonstrate CTC's leadership and commitment to sugarcane production and sustainability, providing substantial improvements for growers.

Molecular biology: Panel Discussion

Panel: ISSCT Molecular Biology Committee members, Dr Sandy Snyman, Dr Jordan Dijoux, Dr Brennan Hyden.

Attendees who wish to contribute brief perspectives are encouraged to contact the Section Chair in advance (jjriascos@cenicana.org).

Attendees are invited to share brief insights on how molecular biology is translating into impact in sugarcane improvement, including advances in genomics, disease resistance, and trait development. Comments may also address challenges in deployment and scalability, key gaps between discovery and field impact, and opportunities for collaboration. Outcomes from this discussion will help shape the Section's priorities and identify areas for coordinated action.