THE 16TH ISBR SYMPOSIUM

#ISBR2022

"Advancing science in support of sustainable bio-innovation"

10 - 14 April 2022, Union Station Hotel, St. Louis, MO, USA

Noting progress with international vaccination programs, a physical symposium is planned to take full advantage of the benefits of personal Interactions.

News Update August 2021

- **YouTube channel**
- **Keynote speakers**
- **Publish with ISBR2022 - Highlight from 2019**
- **Deadline updates**
- **Useful Links**

For detailed information please click here

ISBR YouTube Channel

Watch frequent Symposium news and program highlights
#ISBR2022

For detailed information please click here

Keynote Speakers

An outstanding group of keynote and plenary speakers is being invited and confirmed keynote speakers to date include:

Dr. Jim Carrington **-** President and CEO Donald Danforth Plant Science Center, St Louis, USA

Prof. Kevin Esvelt - Leader, Sculpting Evolution Group, MIT Media Lab, Massachusetts Institute of Technology

Prof. Bill Powell **-** State University of New York, Director Council on Biotechnology in Forestry

Dr. Geradine Mukeshimana - Minister of Agriculture and Animal Resources, Rwanda

For detailed information please click here

Publish your biosafety research with ISBR2022

The ISBR facilitates the publication of a collection of peer-reviewed papers, based on the proceedings of its symposia, as a dedicated research topic in the journal **Frontiers in Bioengineering and Biotechnology**. Following the last symposium, ISBR2019 held in Tarragona, 17 papers from a globally diverse group of authors, were accepted for publication.
Featured below is one of these papers that has already accrued ***26,068*** *total views.*

First Field Release of a Genetically Engineered, Self-Limiting Agricultural Pest Insect: Evaluating Its Potential for Future Crop Protection

From a dedicated research topic of the journal Frontiers in Bioengineering and Biotechnology after the 15th ISBR Symposium in Tarragona, Spain

When a team of researchers conducted an experimental field release of a genetically engineered Diamond Back Moth, a serious global agricultural pest in crucifer crops, in September of 2017 it was the 'first open-field release of any self-limiting insect in North America, and the first open-field release of a self-limiting agricultural pest in the world', as described in an article published after the 15th ISBR Symposium (**Shelton et al., 2020**). The technology uses a genetically engineered insect with a transgene that confers female-specific mortality, making it possible to mass produce males which will find and mate with wildtype females after release in the field. The female progeny of these released males will have the male-selecting, self-limiting gene, and cannot survive. Females in the next generation are reduced with sustained releases of self-limiting males, leading to population suppression. This offers a means of controlling the pest infestation with less insecticide, the current main tool for controlling arthropod pests of crop plants. The contribution to increased sustainability from the use of this approach to pest control in agriculture also goes beyond a reduced dependance on insecticides. Resistance to insecticides is a growing problem for the control of crop pests, including resistance to plant incorporated protectants such as Bt genes in genetically engineered crops. The sustained releases of self-limiting male insects have the potential to significantly slow the resistance developed in the target population of the insect pest. Shelton et al. suggest, 'with the increasing threat of insect resistance to Bt crops, the application of self-limiting insects to delay or reverse the development of resistance, while providing pest control, demonstrates the compatibility of using these two types of genetic pest control'.

The studies described in the article, conducted in open-field releases and in the laboratory, compared biologically significant characteristics of the self-limiting strain of the Diamond Back Moth and the wildtype strain. The studies were conducted under the federal, state and university requirements necessary for an experimental release of a genetically modified organism. The results demonstrated that the behavior of the self-limiting strain was very similar to the wild-type strain, and importantly that the predicted persistence in the field did not differ between the strains at any given release rate. Although further field studies will be necessary, this first field-release was a critical next step to advance this and other applications of biotechnology for the control of insect pests. Shelton et la. conclude with this: 'To be sustainable, agriculture needs to adopt a broader IPM approach to reduce reliance on insecticides. These results suggest this self-limiting strain may provide an effective management tool by itself on Brassica crops and improve the efficacy of chemical or plant-based insecticidal methods through resistance dilution.' This is a critical step for the development of sustainable biotechnologies for a changing world.

Follow similar themes in bio-innovation research and development progress in **Plenary Session 4, *Sustainable biotechnologies for a changing world*,** at the 16th ISBR Symposium. This session will explore the importance of bio-innovation for a sustainable future. Discussion topics will be centered on the need for sustainable bio-innovation to support food, agriculture and industry in the face of population increase, extreme weather, and a changing climate. The need for modernized food systems and informed policies to enable biotechnology advancements, including GM crops, genome editing in plants and animals, biofortified foods, meat alternatives and cell-based meat products, will be discussed. This plenary session will serve as a platform for scientists, researchers, academics, and regulators to discuss science, innovative solutions, public acceptance, and policy development for sustainable biotechnologies.

For detailed information please click here

Deadlines - Important dates to the diary

Category	Action	Opening Date	Closing Date
TSPS & workshops	Call for workshops	1 June 2021	Closed
	Call for topic-specific parallel session (TSPS)	1 June 2021	Closed
	Communication of acceptance/rejection of TSPS & workshop proposals	-	31 August 2021
	Organizers confirmation / withdrawal	-	15 September 2021
	Registration deadline for organizers and presenters	-	15 December 2021
Abstracts	Abstract submission	1 June 2021	30 November 2021
	Communication of acceptance/rejection of abstracts	-	15 December 2021
	Registration deadline for presenters	-	31 January 2022
Registration	Early Bird Registration	1 June 2021	11 February 2022
	Regular Registration	12 February 2022	11 April 2022
Scholarships	ISBR /ABSTC scholarships	1 June 2021	15 October 2021
Other	ISBR Photo Contest	29 June 2021	10 March 2022

For detailed information please click here

Other Useful Links

PROGRAM AT A GLANCE

CALL FOR ABSTRACTS

ABSTC-ISBR SCHOLARSHIPS

REGISTRATION

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