



Genome Editing for Food Security
and Environmental Sustainability

SUMMER WORKSHOP 2024

THURSDAY, JUNE 6TH – FRIDAY, JUNE 7TH
NEW RESIDENCE HALL, MCGILL UNIVERSITY
(MONTREAL QC, CANADA)
HYBRID: IN-PERSON & VIRTUAL





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Program

Thursday, June 6th

Registration	09:00–09:25 a.m.
Morning Session	
Welcome Address	09:25–09:40 a.m.
Prof. Martha Crago (McGill University Vice-President of Research & Innovation) (Introduction by Dr. Jaswinder Singh)	
Workshop Plenary Talk	
Dr. Kanwarpal Dhugga (CIMMYT, Mexico)	Section Chair: Mr. Luc Ouellette 09:40–10:20 a.m.
<i>Completing the circle: Journey from a small farm to Big Ag and back</i>	
Coffee Break	10:20–10:50 a.m.
Gene Editing in Microbes	
Dr. Sebastien Rodrigue (U of Sherbrooke, QC, Canada)	Section Chair: Mr. John Steel 10:50–11:25 a.m.
<i>Harnessing bacterial conjugation for microbiome editing (Keynote)</i>	
Mr. Zhangbin Cai, Ms. Cali Kaye & Ms. Alisha Aggarwal	11:25–11:45 p.m.
(McGill University, Canada & Guru Angad Dev Veterinary and Animal Sciences University, India)	
<i>Harnessing CRISPR/Cas to Overcome Antibiotic Resistance</i>	
Lunch & Networking	11:45–01:00 p.m.
Afternoon Session	
Regulation of Gene Editing	
Dr. Gwendolyn Blue (University of Calgary, Canada)	Section Chair: Ms. Allison Guthrie 01:00–01:35 p.m.
<i>Soft law for biotechnology (Keynote)</i>	
Mr. Ian Affleck (CropLife, Canada)	01:35–02:10 p.m.
<i>Plant Breeding Innovation: Canada as leader domestically and internationally.</i>	
Coffee Break	02:10–02:45 p.m.
Skill-Building Workshop	
Dr. Matthias Klein (McGill University, Canada)	Section Chair: Dr. Blen Beyene 02:45–03:15 p.m.
<i>Responsible use of AI</i>	
Leslie-Ann Schlosser (U of Saskatchewan, Canada)	03:15–04:45 p.m.
<i>How to tell your research story</i>	
First-day wrap up	04:45–05:00 p.m.
Dr. Raj Duggavathi (McGill University, Canada)	



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Program June Friday, 7th

Registration and Welcome 09:30 –10:00 a.m.

Morning Session

Plenary Talk

Section Chair: Dr. Zhou Zhou

Dr. François Eudes (Agriculture and Agri-Food Canada) *virtual* 10:00–10:40 a.m.
Evolution toward greater precision and speed in plant breeding

Coffee Break 10:40–11:10 a.m.

Gene Editing in Plants

Section Chair: Ms. Cali Kaye

Dr. Feng Zhang (University of Minnesota, USA) 11:10 –11:45 p.m.
Precision Plant Genome Editing through the lens of DNA Repair and Epigenetics

Dr. Huirong Gao (Corteva Agriscience, Johnston, IA, USA) 11:45–12:10 p.m.
A successful industry and academic collaboration in gene editing in plants

Ms. María Carrillo Herrera & Ms. Urvashi Sharma 12:10–12:30 p.m.
(McGill University, Canada & Punjab Agricultural University, India)
CRISPR and epigenome editing

Lunch, Networking 12:30–01:30 p.m.

Afternoon Session

GEFSES Trainee Showcase

Section Chair: Mr. Mehtab Singh

3MT Competition 01:30–02:55 p.m.

Gene Editing in Animals

Section Chair: Mr. Zhangbin Cai

Ms. Keerthana Harwalkar & Dr. Yojiro Yamanaka (McGill University, Canada) 02:55–03:25 p.m.
Playing God - gene editing in the real world and laboratory

Dr. R. S. Sethi (Guru Angad Dev Veterinary and Animal Sciences University, India) 03:25–03:55 p.m.
Revolutionizing Dairy: Advanced Technologies for Food Security in Developing Countries

Coffee Break 3:55–4:20 p.m.

Gene Editing potential and prospects

Section Chair: Dr. Karminderbir Kaur

Dr. Gagnept Sidhu (Meiogenix, USA) 04:20–04:45 p.m.
Targeted stimulation of meiotic recombination

Dr. Manjit Singh (Corteva Agriscience, Johnston, IA, USA) 04:45–05:10 p.m.
Genome Editing in Wheat for Fertility and Seed Traits

Presentation of 3MT Awards 05:10–05:25 p.m.

Dr. Jean-Benoit Charron (McGill University, Canada)

Concluding remarks 05:25–05:35 p.m.

Dr. Jaswinder Singh (McGill University, Canada)



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Saturday, June 8th

McGill Mac campus Lab and animal facility tour (optional)

10:30–11:30 a.m.

Contact person

- **Dr. Blen Beyene**
GEFSES program coordinator
E-mail: blen.beyene@mcgill.ca
- **Dr. Jaswinder Singh**
Director, Genome Editing for Food Security and Environmental Sustainability (GEFSES) NSERC-CREATE Program (www.gefses.com)
E-mail: jaswinder.singh@mcgill.ca

2024 Summer Workshop Organizing committee

- **Mr. Luc Ouellette**
Workshop organizing committee Chair
PhD student, Plant Science, McGill University
- **Mr. John Steel**
Workshop organizing committee Ex-officio member
PhD student, Department of Biology, Queen's University
- **Ms. Himani Gautam**
Workshop organizing committee member
Ph.D. student, Animal Biotechnology, Guru Angad Dev Veterinary and Animal Sciences
- **Mr. Mehtab Singh**
Workshop organizing committee member
PhD student, Plant Science, McGill University
- **Mr. Zhangbin Cai**
Workshop organizing committee member
PhD student, Animal Science, McGill University
- **Ms. Allison Guthrie**
Workshop organizing committee member
Master's Student, Biological Sciences, University of Calgary
- **Ms. Cali Kaye**
Workshop organizing committee member
Master's student, Plant Science, McGill University
- **Mr. Khushnoor Brar**
Workshop organizing committee member
Master's student, Plant Breeding and Genetics, Punjab Agricultural University