

Institute of Cannabis Research

COLORADO STATE UNIVERSITY PUEBLO



The 8th Annual Cannabis Research Conference (CRC) will be held on August 7-9, 2024, at Colorado State University-Fort Collins.

The Cannabis Research Conference (CRC) is an annual scientific meeting focused on advancing cannabis science, encompassing both hemp and marijuana. We unite leading researchers, innovators, and industry stakeholders, embracing all dimensions of diversity. We are committed to fostering an equitable and inclusive community for all those interested in cannabis research, irrespective of age, race, ethnicity, religion, gender location, physical ability, or sexual orientation.

This is a multi-disciplinary, three-day conference that explores the latest in cannabis science and innovation for applications in medicines, foods, materials, and textiles that can improve people's lives and society.

[Conference Website](#)

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Aims and Scope

The Journal of Cannabis Research is an international, fully open access, peer-reviewed journal that welcomes sub-missions covering all topics pertaining to cannabis, including original research, perspectives, commentaries and protocols. Our goal is to provide an accessible outlet for interdisciplinary discourse on cannabis research.

[Read Aims & Scope](#)

JCR is the highest ranked (IF: 3.7), fully open access journal in the field, led by an Editorial Board with expertise in every aspect of cannabis. We are fully indexed (PubMed, Scopus, Web of Science etc.), highly accessible to any reader and efficiently reviewed. Topics include:

- Agriculture and plant biology
- Commerce, business, and environment
- Endocannabinoid system
- Cannabis and cannabinoids bio-chemistry and genetics
- Cannabis and cannabinoids preclinical pharmacology
- Cannabis and cannabinoids clinical pharmacology
- Epidemiology and public health
- Cannabis-related disorders
- Medical cannabis

We are Recruiting!

The *Journal of Cannabis Research* is recruiting Associate Editors. If you have experience in any form of cannabis research, we would like to hear from you. Please follow the link below to find out more about the role and apply.

[Apply Now](#)

Recent Articles

[Investigating sex differences and age of onset in emotion regulation, executive functioning, and cannabis use in adolescents and young adults](#)

[Factors associated with the use of cannabis for self-medication by adults: data from the French TEMPO cohort study](#)

Publishing Support

The Journal's current APC is \$2390. BMC and Springer Nature provide support if this is not feasible. Waivers and discounts are available for those who can evidence a lack of funding, authors under certain national or institutional agreements and authors from certain countries.

[OA Funding and Support](#)



ICR Funded Research



Outcomes of the funded research from 2022: "Molecular Targets of Cannabidiol warn against its consumption during pregnancy"

Emily Bates, PhD

Cannabis helps with nausea, anxiety, pain, and sleep, which are common symptoms of pregnancy. Taking cannabis during pregnancy is associated with increased risks for attention deficit and activity disorder (ADHD) and anxiety, poor metabolic and cardiovascular health, and small birth weight for the exposed children. A component of cannabis called cannabidiol (CBD) is also taken for similar symptoms, but whether CBD contributes to adverse effects of whole cannabis on fetal development is not known. With funding support from the Institute of Cannabis Research, Emily Bates, PhD and students in her lab (Karli Swenson, Lillian Folts, and Kamryn Korth) used mice to test whether gestational CBD exposure affects brain development and post-natal behavior. They found that gestational CBD exposure did not affect postnatal anxiety behaviors. Male mice that were exposed to CBD during gestation are hyper-sensitive to pain (Swenson et al. 2023). Female mice that were exposed to CBD during gestation have reduced cognitive function (Swenson et al. 2023). In collaboration with Dr. Won Chan Oh and his student Luis Gomez-Wulshner, the Bates lab tested whether CBD alters the function of the part of the brain that is important for solving problems, the pre-frontal cortex. They found that the prefrontal cortex is less excitable or does not work as well in female mice exposed to CBD during gestation (Swenson et al. 2023). This important research was published in a prestigious Nature journal called Molecular Psychiatry. This work has been presented at several regional, national, and international conferences including Annual Cannabis Research Conference (2022, 2023 Denver, Colorado), Society for Developmental Biology (Vancouver, Canada), the Society for Birth Defects Research and Prevention (Vancouver, Canada), the Society for Neuroscience, and the Middle Atlantic Reproduction and Teratology Association conference (2022, Gaithersburg, MA) among others.

CBD targets are in the developing hypothalamus, a region of the brain that plays a role in anxiety, feeding, and physical activity. With funding from the Institute for Cannabis Research, the Bates lab tested whether gestational CBD exposure during pregnancy changes gene expression in the hypothalamus. Gestational CBD exposure changed the expression of genes that are important for brain development,



Emily Bates, PhD and Karli Swenson, presented award at the Society for Birth Defects Research and Prevention

regulating feeding behavior, metabolism, and blood sugar levels. Because gestational CBD exposure changed gene expression in the hypothalamus, the Bates lab tested blood sugar levels with glucose tolerance tests. They found that gestational CBD exposure increases blood sugar levels. They found CBD-exposed animals are insulin resistant. These are the hallmarks of diabetes. This research has been presented at the Annual Cannabis Research Conference (2022, 2023 Denver, Colorado), the Society for Developmental Biology, the Society for Birth Defects Research and Prevention (Vancouver, Canada), the Diabetes Research Conference at University of Colorado Anschutz Medical Campus, and the Ludeman Family Center for Women's Health Research National Conference (2022). This work raises concerns that CBD consumption during pregnancy is not without risks to the developing baby.

In addition to funding important research about the effects of CBD on fetal development, the Institute for Cannabis Research funded the education and training of PhD students including Madison Rodriguez, Karli Swenson, and Lillian Folts, who each have contributed to this work and have presented it in numerous research conferences and public forums. Funding provided support for outreach about cannabis and public health at the Colorado State Capital and other venues.

Upcoming Webinars



Dan Covey, PhD

CANNABIS RESEARCH WEBINAR SERIES

TITLE: Effects of isolated cannabinoids and endocannabinoids on emotional behavior in rodents

DATE: May 9th, 1:00PM MST [REGISTER HERE:](#)

Dr. Covey is currently an Assistant Professor at Lovelace Biomedical Research Institute (LBRI) in Albuquerque, New Mexico. He leads a competitive research group that combines state-of-the-art techniques capable of simultaneously monitoring and controlling neuronal activity in real time to understand motivation, learning, and reinforcement in health and disease. A primary focus of Dr. Covey's research has been to understand the cellular mechanisms by which cannabinoids and endocannabinoids influence dopamine function and motivated behaviors.



Ken Olejar, PhD

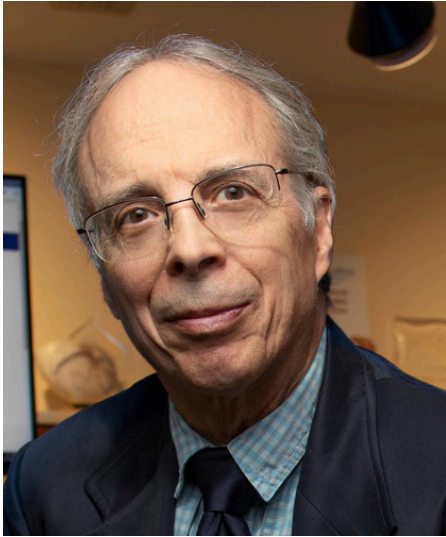
CANNABIS PLANT SCIENCE & CULTIVATION SERIES

TITLE: Cannabinoid extraction and modification: Current and future trends.

DATE: May 15th, 11:00AM MST [REGISTER HERE:](#)

Dr Ken Olejar is a Research Associate at Colorado State University - Pueblo and the founder of AgriBioactive Consulting. He obtained his MSc in Pharmaceutical Science from the University of Florida and his PhD in Analytical Chemistry from The University of Auckland, New Zealand. He specialises in the identification of metabolites produced in plants and fermentations. His group's current research is in the area of cannabinoid extraction and modification.

Upcoming Webinars



Ethan Russo, MD

CANNABIS RESEARCH WEBINAR SERIES

TITLE: Limonene, THC, Herbal Synergy and the Entourage Effect.

DATE: June 13, 2024, 1:00PM MT [REGISTER HERE:](#)

Ethan Russo, MD, is a board-certified child and adult neurologist(1987), psychopharmacologist, and Founder/CEO of CReDO Science. He is also Chief Medical Officer to [Andira Pharmaceuticals](#), Senior Medical Advisor to [Canurta](#), and Medical Director of [Breeder's Best](#). He was Director of R&D for the International Cannabis and Cannabinoids Institute, 2017-19, Medical Director of PHYTECS, 2015-2017, and from 2003-2014, Senior Medical Advisor, medical monitor/study physician to GW Pharmaceuticals for numerous Phase I-III clinical trials of Sativex® and Epidiolex®. Dr. Russo was a clinical neurologist in Missoula, Montana for 20 years and has held faculty appointments as Adjunct Associate Professor, Department of Pharmaceutical Sciences, University of Montana and Clinical Assistant Professor, University of Washington School of Medicine.



Felipe Sarmiento Salazar, PhD

CANNABIS PLANT SCIENCE & CULTIVATION SERIES

TITLE: Flowering modulation in *Cannabis sp.* by night interruption.

DATE: June 19, 2024 11:00AM MT [REGISTER HERE:](#)

Felipe Sarmiento Salazar, PhD, is a biologist who graduated from the Universidad de los Andes, doctor in Biology from the University of Freiburg and professor at the Department of Biology, National University of Colombia since 2016. Professor Sarmiento has extensive experience in plant molecular biology and plant response to biotic and abiotic stimuli, in model plant *Arabidopsis thaliana* and in plants of commercial interest such as potato, cannabis, *Passiflora* and cassava. He has supervised master's theses and undergraduate projects on phenotypic and molecular characterization of Cannabis accessions and physiological and molecular responses of the plant to photoperiod. Currently, Dr. Sarmiento coordinates the epigenetics discussion group and focuses his research on the analysis of priming and memory phenomena in plants in response to biotic and abiotic stimuli.

A Deeper Look At Hemp

Photos by Dr. Eun-Soo Kim



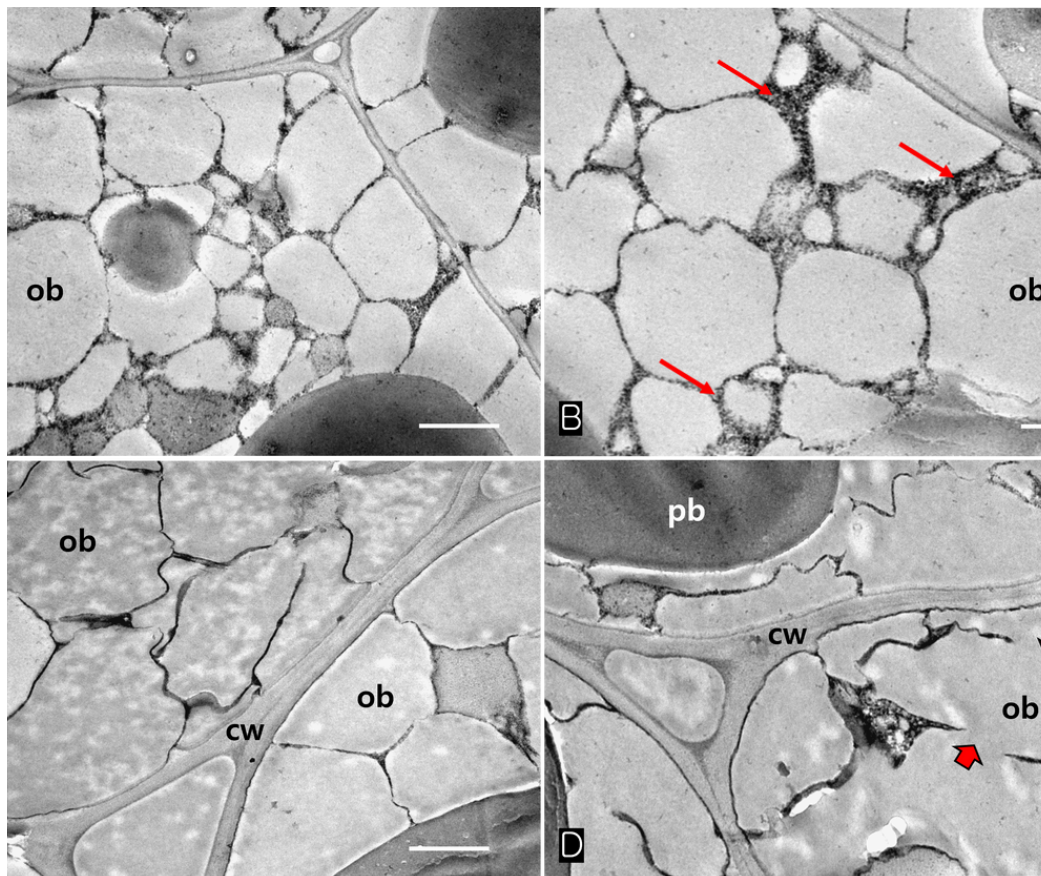
TEM images of cotyledon cells of Cannabis seed showing the degeneration process of oil bodies during germination. Abbreviations: ob, oil body; pb, protein body and CW, cell wall.

(A,B) At the early stage of germination, dense materials (arrows) aggregate adjacent to the oil bodies and associate with them.

(C) At the middle stage, irregular hyaline areas are distributed throughout oil bodies, showing the destabilized emulsification of oil bodies. Note the border of oil bodies become a dense and sinuous outline.

(D) The oil bodies lose their morphology and fuse with one another at the late stage of germination (wide arrows).

Image courtesy of Dr. Eun-Soo Kim (ICR). Kim et al.(2023), AoB PLANTS, 15(6): 1-11



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