



2023 CANNIBIS RESEARCH CONFERENCE



2023
**CANNABIS
RESEARCH
CONFERENCE**

This is our first Newsletter following the very success Cannabis Research Conference 2023 in Denver. The conference included about 340 attendees, more than 140 presentations representing the latest cannabis research, and more than a dozen exhibitors. The Mechoulam Lecture was delivered by Dr. Esther Shohami and the Keynote Address was given by Sofia Thanhauser.

A research conference is largely judged by the quality of the presentations and information shared, and based on the feedback of attendees, the CRC 2023 was filled with plenty of quality content. Thank you to all those that participated in the conference as a presenter and to those attendees that were there to glean the latest cannabis research and related information. If you are interested in exploring the content of CRC 2023 you can still view the [full conference program online](#), including the presentation abstracts.

Keep an eye out for initial information about the Cannabis Research Conference 2024, which will be coming out soon.

Dr. Chad Kinney, Director



Institute of Cannabis Research Staff - Dr. Jeff Smith, Ms. Wendy Fairchild, Mr. Dushunte Carmon and Dr. Chad Kinney, Director

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Cannabis Research Webinar Series:

- Sept. 14th 1:00PM MST Dr. Dr. Ryan Vandrey
- Oct. 12, 1:00PM MST Dr. Tess Eidem

Cultivation Webinar Series:

- Sept 13th, 11:00AM MST Dr. Jim Faust
- Oct 25, 11:00AM Dr. Brian Whipker

A Deeper Look at Hemp - Dr. Eunsoo Kim

- Scanning electron microscopy

2023 CANNIBIS RESEARCH GOVERNING BOARD



Dr. John Harloe

John Harloe, J.D., Ph.D. grew up in Charlotte North Carolina as one of three siblings, and attended college at Furman University in Greenville, South Carolina where he studied psychology and neuroscience. Dr. Harloe's experience in cannabis began in 2003 at VCU Medical Center's department of Pharmacology and Toxicology, where he worked as a graduate student under the guidance of Professor Aron Lichtman. As a world-leading institution for cannabis science, Dr. Harloe was one of the first to study the pharmacological effects of FAAH and MAGL inhibitors on the endocannabinoid system, particularly in the field of learning and memory. After graduating with his Ph.D. in 2008, Dr. Harloe attended law school at SMU in Dallas, Texas, graduating cum laude with this J.D. in 2011. Despite practicing drug and device litigation for 8 years, during which time the firm secured numerous nationally recognized trial verdicts against Fortune 500 companies, the rapidly changing legal landscape of cannabis provided a once in a lifetime chance to switch careers to a practice area he was truly passionate about.

One month after the passage of the 2018 Federal Farm Bill, John and his wife moved to Denver to take on the role of general counsel at one of the largest hemp companies in the world, Balanced Health Botanicals.

Since joining Balanced Health Botanicals, Dr. Harloe helped lead the company through an acquisition by Village Farms, Inc., a NASDAQ listed company, and has served as a board member for the US Hemp Roundtable, as Vice Chair for the ABA Cannabis Law and Policy Committee, and as a member of the International Cannabinoid Research Society and National Cannabis Bar Association. In addition, the State of Colorado appointed Dr. Harloe to both the Colorado Hemp Advancement and Management Plan (CHAMP), as well as the SB 22-205 Task Force to advise the Colorado legislature as to 'intoxicating hemp and THC products.' On his recent appointment to the Institute for Cannabis Research ("ICR"): "The appointment is an incredible honor aligned with one of my personal missions: making a noticeable difference in the cannabis space through the promotion of science and education", said Dr. Harloe. "Cannabis science is 60 years behind the curve due to policies which have prevented funding research that could justify the use of cannabis as medicine. The ICR was founded largely to address this problem specifically, and I am thrilled to be invited to assist in their mission. The importance of this is even more clear in that, until we fill the gaps in scientific knowledge, we will never be able to develop smart, science-driven cannabis policy."

Dr. Harloe lives in Denver with his wife, one year old daughter, and a pug named Buddy. Dr. Harloe is also heavily involved in the Ben Meyer Recovery Foundation, the mission of which is to provide scholarships for sober living and intensive outpatient therapy to those struggling with addiction. In their spare time, the Harloe's try to spend every possible moment outside of the city hiking, camping, and exploring all that Colorado has to offer.

JOURNAL OF CANNABIS RESEARCH



Journal of Cannabis Research

The Journal of Cannabis Research (JCR) is the official publication of the Institute of Cannabis Research. It is the only broadly multidisciplinary journal of cannabis research, encompassing not only clinical and scientific research, but also research into social,

business, economic, legal, environmental, and ethical impacts of cannabis use and the changing legal status of cannabis. To learn more about the aims and scope of the journal as well as submission guidelines, please visit:

Journal of Cannabis Research

<https://jcanabisresearch.biomedcentral.com>

Journal of Cannabis Research: 5 Years of Progress

The Journal of Cannabis Research (JCR), official journal of the Institute of Cannabis Research, has made robust progress since it started accepting manuscripts in September 2018. Over the past 5 years, we have published 194 articles on diverse topics ranging from the biology of the Cannabis plant and the body's endogenous cannabinoid system to the effects of cannabinoids in animals and humans and the use of medical cannabis. We are currently the only multidisciplinary, international, open-access, cannabis-focused journal. Our articles have been downloaded more than 850,000 times and mentioned more than 4300 times on social media and in blogs (through April, 2023). In 2022 alone, JCR articles were downloaded more than 670,000 times.

Another measure of the quality of a journal is the average number of times its articles have been cited by other authors. This is calculated by dividing the total number of times that JCR articles have been cited by the total number of articles published. Different publishers have slightly different ways of calculating this score. In 2022, JCR had a CiteScore of 3.4 (published by Scopus) and an Impact Factor of 3.7 (published by Web of Science). These scores place JCR as one of the leading cannabis-focused journals in the world.

David Gorelick, MD, PhD, DLFAPA, FASAM

Editor-in-Chief



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ICR RESEARCH



2023 Funded Research Studies

Our funded 2023 Research Studies have been reviewed, selected and announced. Funded projects focus on topics related to cannabis research, including biology, chemistry, physiology, and agronomy; medical and clinical research; and public health and harm reduction/societal impacts.

Congratulations to the following recipients of this award:

·Dr. William Baurerle-CSU Ft. Collins

Title: Increasing the Analytical Testing Capability of Cannabinoids and Concomitant Phytomolecules in Cannabis-derived Plant Matrices

·Dr. Nicole Tartaglia - UC Denver

Title: Endocannabinoids in Children with Autism Spectrum Disorder and Changes with Cannabidiol (CBD) treatment

·Dr. Hollis Karoly - CSU Ft. Collins

Title: Developing predictive models to distinguish alcohol use, cannabis use and co-use: an exploration of electroencephalography (EEG) metrics and traditional intoxication measures

·Dr. David Root - CU Boulder

Title: Identifying the neuronal cell-types responsible for the rewarding and aversive properties of THC

·Dr. Jessica Prenni-CSU Ft. Collins

Title: Examination of the bi-directional interactions between phytocannabinoids and a human-associated gut microbiota

·Dr. Alison Bauer- Anschutz Medical Ctr.

Title: Investigation of polycyclic aromatic hydrocarbons resulting from vaped or dabbed cannabis/cannabis-derived products with known adverse health effects

[Click here to read more about these RFA awardees and their projects:](#)

UPCOMING WEBINARS

Institute of
**Cannabis
Research**



COLORADO STATE UNIVERSITY PUEBLO

Cannabis
Research
Webinar
Series



Jefferson
Thomas Jefferson University

Lambert Center for
the Study of Medicinal
Cannabis & Hemp

September 14th Webinar: The ICR and Lambert Center recently hosted Dr. Ryan Vandrey for the webinar on September 14, 1:00PM MST

Title: “Experimental analysis of acute cannabis and cannabinoid effects in healthy adults”



Dr. Ryan Vandrey

This webinar has already taken place. Please find the recording on the ICR webpage here:

[View Here](#)

October 12th Webinar: The ICR and Lambert Center are pleased to host Dr. Tess Eidem for the webinar on **October 12, 1:00PM MST** [Register Here](#):

Title: “Assessing and Addressing Microbial Risks to Cannabis Patients and Consumers”

Tess Eidem earned her Ph.D. in Microbiology discovering novel antimicrobial compounds against bacterial pathogens, and she has continued to expand her knowledge in and outside of the lab, building a strong background in manufacturing, product safety and quality, and microbial detection and prevention measures with a focus on controlled environment agriculture (CEA) settings.

Dr. Eidem is a Senior Researcher at the University of Colorado Boulder in the Aerobiology and Disinfection Laboratory investigating airborne molds, allergens, and pathogens, where she works to uncover new methods to kill and deactivate microorganisms and their harmful bioactive agents. As the Chief Scientist at her company Rogue Micro LLC, she consults with CEA manufacturers, regulators, and laboratories in the cannabis space to understand and overcome microbial challenges that pose a risk to cannabis plants, products, workers, and consumers



Dr. Tess Eidem

UPCOMING WEBINARS



CANNABIS CULTIVATION Webinar Series



September 13 Webinar: The ICR and the Volcani Center recently hosted Dr. Jim Faust on Wednesday, September 13th, at 11:00AM MST
Title: "Nutrient Restriction (AKA Flushing): An old idea with a new twist"

This webinar has already taken place. Please find the recorded webinar on our ICR website below:

[View Here](#)



Professor Jim Faust

October 25th Webinar: The ICR and the Volcani Institute are pleased to host Dr. Brian Whipker on Wednesday, October 25th, at 11:00AM MST [Register Here:](#)
Title: "Cannabis Insights: Diagnosing Nutrient Disorders"

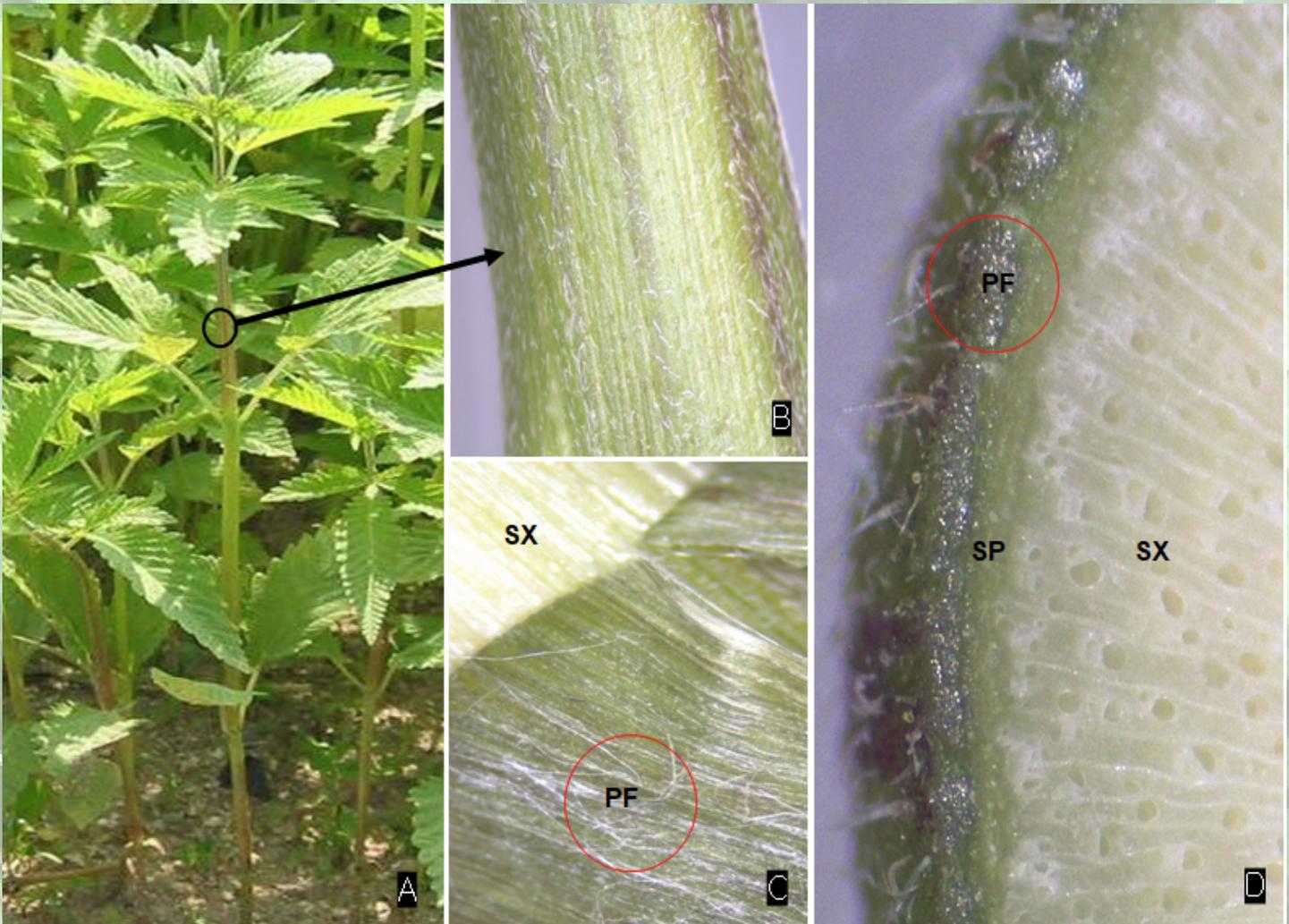
Brian Whipker has been a Professor at NC State University for over 30 years specializing in plant nutrition, plant growth regulators, and disorder diagnostics. He has published >120 scientific papers and >300 grower articles during his career. He co-created an online grower resource fertdirtandsquirt.com which focuses on nutrient monitoring and nutrient standards. He also co-authored the book *Nutrient Deficiencies in Bedding Plants: A Pictorial Guide for Identification and Correction*. The culmination of his plant growth regulator research is emphasized in the *Plant Growth Regulator Guide for Annuals* published by Fine America/GrowerTalks. His current focus is to provide scientifically-based grower information about plant leaf tissue analysis standards and plant nutrition.



Professor Brian Whipker

A Deeper Look at Hemp - Stereoscopic microscope images presented by
Dr. Eunsoo Kim, Visiting Scientist

"Morphology of Cannabis stem 1"



A. External feature of *Cannabis sativa* plants with three internodes at 17 days after sowing.

B. Close-up of the stem showing numerous white trichomes on the surface.

C. The inner skin of the stem containing the white phloem fibers (PF) and green phloem is easily peeled off from the secondary xylem (SX).

D. Transverse section through the young stem of the *Cannabis* showing secondary phloem (SP) and secondary xylem (SX).

Note the white phloem fibers (PF) cross sectioned in the outer region of the phloem.