



The Journal of Cannabis Research

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The [Journal of Cannabis Research](#) was established in April 2018 as an open-access, on-line only, multi-disciplinary, international scientific journal covering the entire scope of cannabis research. The journal is sponsored by the Institute for Cannabis Research at Colorado State University Pueblo to support the Institute's mission of promoting and disseminating cannabis research. The mechanics of publication are conducted under contract to Springer Nature, one of the world's largest international publishing companies.

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The Journal is broadly multi-disciplinary in scope. Its 10 topic sections cover the agriculture and plant biology of the *Cannabis* plant, actions of cannabis and cannabinoids at the *in vitro*, animal, and human levels, the endocannabinoid system, medical use of cannabis, cannabis-related disorders and their treatment, and historical, legal, environmental, and economic aspects of cannabis production and use.

The Journal is international in scope. Its editorial board comprises 34 distinguished scientists from 10 countries on 5 continents. Members include Prof, Raphael Mechoulam, the "father" of modern cannabis research. Manuscripts have been submitted from 37 countries on 6 continents.

The Journal has made substantial progress since it began accepting manuscripts in September, 2018. An increasing number of manuscripts are being submitted: 34 in the first year, 111 in the second year, and 136 so far in the third year (as of May 13, 2021), for a cumulative total of 281 submitted manuscripts. Accepted manuscripts are also increasing: 6 in the first year, 19 in the second year, and 48 so far in the third year, for a cumulative total of 73 accepted manuscripts. The Journal is rapidly gaining acceptance by the international scientific community. Within less than 3 years of publication, it is now included in two major international scientific data bases: PubMed (published by the US National Library of Medicine) and Emerging Sources Citation Index (published by Web of Science).

In summary, the *Journal of Cannabis Research* is now one of the leading scientific journals in the cannabis field and plays an important role in carrying out the mission of the Institute for Cannabis Research.

Special Conference Discount for Readers!

The Institute for Cannabis Research today announced a special discounted rate for its ICR Newsletter readers. Readers can register for the 2021 Virtual Cannabis Research Conference using a promo code that saves 15% off student and general registration prices for a limited time.

The promo code is SAVE15.

Register online at CannabisResearchConference.net and use Promo Code "SAVE15" to save 15%.

The **2021 Virtual Cannabis Research Conference** will be held August 3-5th, in collaboration with the Oregon State University's Global Hemp Innovation Center.

"Our conference will explore new cannabis related knowledge, research and innovations that are meant to improve understanding of cannabis," says Dr. Chad Kinney, Director of CSU Pueblo's Institute for Cannabis Research. "We will bring together many of the brightest innovators including medical experts, university researchers, private industry, public policy, and more."

The 2021 Virtual Cannabis Research Conference will feature two world-renowned cannabis researchers. Dr. Daniele Piomelli will present the Mechoulam Lecture on "The Role of Endocannabinoid and Paracannabinoid Signals in Pain Regulation." Dr. Marilyn Huestis will present the Opening Plenary Address on "Short-and Long-Term Consequences of Cannabis Use."

Attendees will be able to participate in more than 100 live & on-demand presentations including:

*Achieving Social and Economic Equity in the United States Cannabis Landscape *Cannabis for Pain Management and Addiction in Diverse Populations *Cannabis in the Developing World *Global Trends in Cannabis Science and Hemp Industry *Industrial Hemp and its Byproducts as Livestock Feed and many more.

The conference will also feature live panel discussions focusing on:

- Law and Regulation and Its Role in Cannabis Research
- *Reimagining the Black Community Through Cannabis and Hemp
- *The Sustainability of Cannabis and Hemp: Economics and Life Cycle Assessment
- *The Varieties of Cannabis Regulatory Experiences: The Intersection of Standards, Regulations, and Research
- *What Keeps Us up at Night: CDOT, CDPHE and Community Partners Discuss What We Know and Don't Know About Cannabis and Public Health in Colorado and many more.

In addition, attendees will be able to attend a virtual poster hall and an interactive, virtual exhibit hall.

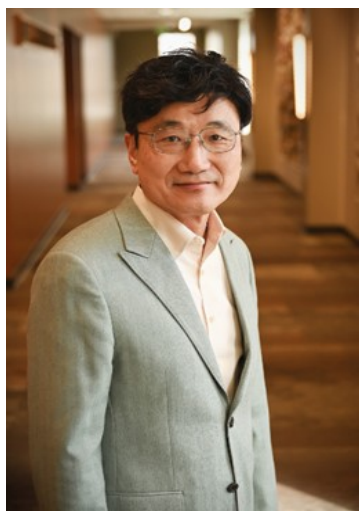
The full [Program](#) is now available!

To join the conversation on social media, follow [#cannabisresearchconference](#).

There is no better time or place to connect with global cannabis experts while actively planning new research ventures.

Join us in *Exploring Cannabis Research Frontiers...*





Formation of Cannabinoids in the Glandular Trichomes of Cannabis

PI: Dr. Eun-Soo Kim, Visiting Scholar at ICR

Co-PI: Dr. Sang-Hyuck Park, Senior Scientist at ICR

We have been investigating the glandular trichomes of *Cannabis* since Dr. Eun-Soo Kim joined the Institute of Cannabis Research (ICR) in December 2019. Secretion of secondary products is a major activity performed by secretory cells in the head part of the glandular trichome, and the products are accumulated in the noncellular secretory cavity in the *Cannabis* plant. In general, three types of glandular trichomes in *Cannabis* are frequently recognized: bulbous, capitate-sessile, and capitate-stalked trichome. They cover the surface of all

plant parts that are above ground.

Capitate-stalked trichomes have garnered research interest, whereas the other two types of glandular trichomes have barely been investigated for the past twenty years. Capitate-stalked trichomes are an excellent model for carrying out studies on secretion due to their large size, abundance on bracts, ease of isolation, and the availability of numerous data about their contents. Some previous studies have suggested that bulbous or capitate-sessile trichomes may have distinctive functions and different components of cannabinoids, although there is still a lot to learn in this area of research.

Our goal is to determine the functional activities of the three types of glandular trichomes related to the biosynthesis of cannabinoids. First, we examined and compared the external features, distribution, and densities of these glandular trichomes using a dissecting microscope, light microscope, and scanning electron microscope with an image-analyzing program. Second, we are analyzing the secretory cavity contents of individual glandular trichomes removed through micro-capillary procedures from hundreds trichomes of each type using HPLC. Third, we are examining the localization and distribution of CBD using a monoclonal antibody probe in chemically fixed and paraffin-embedded tissues. By means of undertaking this glandular trichome study, we will provide critical information for molecular breeding, targeted engineering, and optimized harvest and processing of *Cannabis*.

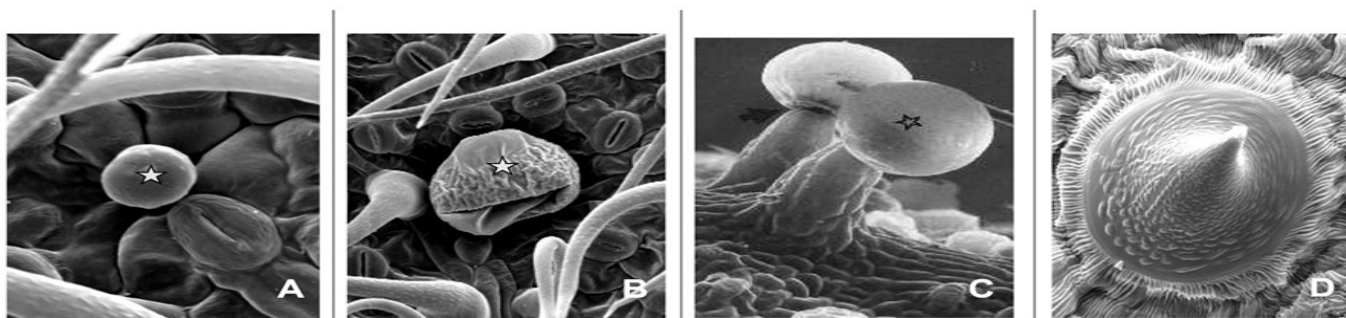


Figure: SEM images of glandular and non-glandular trichomes in *Cannabis* leaves.

Bulbous (A), Capitate-sessile (B), Capitate-stalked trichome (C), and Non-glandular trichome (D).



ICR WEBINAR SERIES
Institute of
Cannabis Research
COLORADO STATE UNIVERSITY PUEBLO

ICR Webinar Series

July Webinar: The ICR is pleased to host Dr. Ziva Cooper for our July 8, 2021 webinar at 1:00pm MST,



Dr. Ziva Cooper

Title: Human studies probing cannabis constituents for pain relief: Looking beyond delta-9-THC

Dr. Ziva Cooper is the Director of the UCLA Cannabis Research Initiative in the Jane and Terry Semel Institute for Neuroscience and Human Behavior and Associate Professor in the Department of Psychiatry and Biobehavioral Sciences and Department of Anesthesiology at the David Geffen School of Medicine. Her current research involves understanding variables that influence both the therapeutic potential and adverse effects of cannabis and cannabinoids through double-blind, placebo-controlled studies.

Current funded projects include 1) understanding differences between men and women in their response to the abuse-related and pain-relieving effects, and the role that circulating hormones and endocannabinoids contribute to these differences, 2) the potential for THC and CBD to reduce reliance on opioids, 3) impact of cannabis use on HIV-associated inflammation, and 4) the effectiveness of cannabidiol to address symptoms associated with rheumatoid arthritis.

Dr. Cooper served on the National Academies of Sciences Committee on the Health Effects of Cannabis that recently published a comprehensive consensus report of the health effects of cannabis and cannabinoids. She is past president of the International Study Group Investigating Drugs as Reinforcers, a Board Director for the College on Problems of Drug Dependence, an Associate Editor of The American Journal of Drug and Alcohol Abuse, and is on several Editorial Boards of journals including Cannabis and Cannabinoid Research and Neuropsychopharmacology. Register Here: [Webinar Registration - Zoom](#)

ICR Webinar Series Announcements!

Please note that due to the Cannabis Research Conference hosted by the Institute of Cannabis Research and the Global Hemp Innovation Center being scheduled for August 3-5, The ICR Webinar Series will take a break in August and return again in September.

The ICR is pleased to announce that when the Webinar Series resumes in September it will be in partnership with the [Lambert Center](#) for the Study of Medicinal Cannabis and Hemp at Thomas Jefferson University.



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](#)

Here are two recently published articles in the JCR that may be of interest:

[Predictors of cannabis and tobacco co-use in youth: exploring the mediating role of age at first use in the population assessment of tobacco health \(PATH\) study](#)

[Cannabidiol use and effectiveness: real-world evidence from a Canadian medical cannabis clinic](#)

The Institute of Cannabis Research is now accepting donations to support future cannabis research. You, our friends, colleagues and supporters, have the *ability* to help us continue to support cutting edge research by donating to the ICR Research Fund. We hope you will consider contributing to this important opportunity to enhance our understanding of the applications and impacts of cannabis. All donations contributed are tax deductible. Please consider a year-end donation. To donate or to get more information please click on the donate button:

**Donate
Here**