



2026

ANNUAL REPORT



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LETTER FROM THE CHAIR OF THE GOVERNING BOARD

As Chair of the Governing Board of the Institute of Cannabis Research (ICR), I'm proud to reflect on another year of meaningful growth, collaboration, and impact. Over the past year, the ICR has continued to expand its role as a national leader in cannabis science, education, and public engagement while strengthening partnerships that support rigorous research and informed policy development across Colorado and beyond.

This year, we continued building momentum through expanded collaborations among researchers, healthcare professionals, educators, policymakers, students, and industry leaders. These partnerships remain central to the ICR mission and reinforce the importance of evidence-based research in addressing complex public health, scientific, and regulatory questions surrounding cannabis.

SUPPORTING INNOVATIVE RESEARCH

One of the most significant accomplishments this year was the advancement and funding of several new ICR-supported research grant proposals. Despite ongoing budget pressures at the state level, the Institute remained committed to supporting high-quality scientific inquiry with meaningful real-world applications.

Newly funded projects focused on areas including chronic spine pain, cannabis-impaired driving, and cannabidiol metabolites, among others. These studies reflect the breadth and maturity of cannabis research emerging from Colorado and demonstrate the ICR's continued commitment to funding interdisciplinary work that advances public understanding and informs future policy and healthcare decisions.

BUILDING COMMUNITY THROUGH EVENTS

This year also marked an exciting milestone for the Institute through the success of the 2nd Annual ICR Advancement and Networking Gala. The event brought together researchers, supporters, policymakers, industry professionals, students, and community members for an evening at the beautiful Baldoria on the Water, celebrating innovation, collaboration, and the growing impact of cannabis research. The Gala not only highlighted the accomplishments of the Institute but also demonstrated the strong community of supporters committed to advancing credible, independent science in this evolving field.

We are also looking ahead with great anticipation to the upcoming ICR Annual Conference in October 2026 in San Diego. The conference continues to serve as a premier forum for thought leadership, scientific exchange, and interdisciplinary collaboration. As the cannabis research landscape evolves rapidly, the conference provides a critical platform for researchers and stakeholders to share emerging findings, explore new opportunities, and engage in important conversations shaping the future of cannabis science, medicine, education, and policy.

LOOKING AHEAD

The continued success of the ICR would not be possible without the dedication of our researchers, faculty affiliates, students, staff, sponsors, donors, and Governing Board members. Their expertise, commitment, and collaborative spirit continue to strengthen the Institute and expand its impact.

As we look ahead, the opportunities before us are tremendous. Cannabis research is entering a period of unprecedented visibility and growth, and the ICR is well positioned to help lead the scientific, educational, and policy conversations that will define the future of the field. Together, we will continue advancing innovative research, expanding educational opportunities, fostering collaboration, and supporting the Institute's mission to improve lives through credible cannabis science.

Warm regards,

Dr. Jon Reuter

Chair, Governing Board
Institute of Cannabis Research



ABOUT THE GOVERNING BOARD



The ICR has a state appointed Governing Board that plays a critical role in the operation of the Institute. The Board is comprised of four ex officio members including Dr. Jon Reuter (representing the President of the University of Colorado System), Dr. Gail Mackin (formerly) and Dr. David Lehmpuhl (representing the Chancellor of the Colorado State University System), Ms. Elyse Contreras (representing the Executive Director of the Colorado Department of Public Health and Environment), and a vacant representative of the Executive Director of the Colorado Department of Higher Education. The members representing cannabis-related industries include Mr. Sherard Rogers, Mr. Chuck Smith, and Dr. John Harloe, JD, and Mr. Mike Hennesy. There are three Board Members associated with cannabis-related research that include Dr. Angela Bryan, Dr. Joanna Zeiger, and Dr. Melissa Reynolds. In addition to serving important roles supporting the operation of the ICR, the Board brings a wealth of diverse experience and knowledge that directly relates to cannabis research.



DR. ANGELA BRYAN



DR. MIKE HENNESY



DR. JON REUTER



MR. CHUCK SMITH



MS. ELYSE CONTRERAS



DR. DAVID LEHMPUHL



DR. MELISSA REYNOLDS



DR. JOANNA ZEIGER



DR. JOHN HARLOE



DR. GAIL MACKIN



MR. SHERARD ROGERS

BOARD HIGHLIGHTS

JOHN HARLOE

Cannabis research in this country is roughly 60 years behind where it should be. I saw these barriers firsthand while conducting cannabis research at VCU Medical Center: restrictions on funding, the difficulty of obtaining DEA licenses, a research supply of cannabis that bears little resemblance to what's actually on dispensary shelves, and even threats to strip universities of all federal funding. For years, federal policy was to fund studies on the harms of cannabis but not its benefits, leaving half the scientific picture deliberately unexamined.

That's beginning to change. With the potential rescheduling of cannabis to Schedule III, we may be on the precipice of a genuine frame-shift: a national willingness to recognize and seriously study the therapeutic potential of controlled substances. The policy landscape is evolving rapidly.

How far behind are we? I served on Colorado's 22-205 task force to develop regulations for intoxicating hemp, and we could not even establish the mean dose of THC required to intoxicate an average person. That single gap speaks volumes—and it is one of many reasons cannabis science has never been more important.

This is why public funding matters. State support is vital but perpetually at risk of cuts. I'm proud that our second annual fundraiser drew more than 120 attendees and raised \$50,000. Proceeds from our first dinner funded additional student grants—laying a foundation for the next generation of cannabis researchers.

But we're barely making a dent.

I encourage everyone to spread the word about the ICR, and to consider giving to this mission.



ELYSE CONTRERAS

I serve on the governing board as the designee for the Executive Director of the Colorado Department of Public Health & Environment. Over my 16-year career in public health, I have dedicated 12 years to studying cannabis use, analyzing its health effects, and administering a grant program focused on cannabis-related public health priorities. I view my work through two lenses: as an epidemiologist, it is my life's work to investigate trends in illness and mortality pathways; as a public servant, it is my duty to translate research and data into transparent, evidence-based knowledge regarding both the risks and potential benefits of cannabis. This is why the Institute of Cannabis Research (ICR) is so vital to me. Despite expanding legal markets worldwide, critical gaps in our understanding remain, leaving us with unanswered questions and unknowns. The ICR stands out as one of the few entities dedicated specifically to funding cannabis research. The studies it has funded have cumulatively expanded the global scientific knowledge base. As a 'disease detective,' I am driven by questions and unknowns. As a governing board member, I am privileged to enable the rigorous research needed to answer them—science that has the power to inform policy and transform millions of lives.



LETTER FROM THE DIRECTOR



While you may not realize it, 2026 is a monumental milestone for the Institute of Cannabis Research (ICR). This year marks our 10th anniversary, celebrating a decade defined by a rich history and significant scientific accomplishments.

The Institute originally began as a single unit at Colorado State University Pueblo, focused strictly on campus-based research and education. Our first major evolution came in 2019, when the Colorado Legislature established the ICR as a state organization, complete with a Governing Board and clear statutory requirements. This pivotal moment successfully shifted our scope to a vital, statewide focus.

Our second major development has been the ICR's rise as a national leader in cannabis research. We have achieved this by supporting critical, pioneering projects conducted by top Colorado scientists. Some of this research intentionally fills the gaps left by the narrower funding approaches of federal agencies. Our national prominence is further elevated by the National Cannabis Research Conference (NCRC), which draws a national and international audience as the premier interdisciplinary cannabis conference in the country. Furthermore, in collaboration with publisher Springer Nature, the ICR created the Journal of Cannabis Research, which is now the highest-rated, peer-reviewed cannabis research journal globally.

Looking ahead, I see the next chapter of the ICR defined by growing partnerships with similar organizations across the nation and beyond—collaborations that will amplify our collective impact. I anticipate that preclinical research supported by the ICR will pave the way for major clinical studies, drawing greater federal investment into Colorado. Ultimately, lawmakers and regulators will increasingly rely on Colorado's research to refine public health policies and maximize public benefits.

Reflecting on both our past and our future is particularly meaningful to me, as 2026 is also a year of personal transition. I will be stepping down as Director of the ICR to return to a full-time faculty role at CSU Pueblo. While I am shifting roles, I will continue to support the Institute and look forward to advancing cannabis science through my own research capacity.

When I stepped into the Director role in 2018, I never could have predicted the profound impact of this journey. Leading the ICR has been the most significant and rewarding contribution of my career to both Colorado and the global scientific community. It has been an absolute pleasure to help steer the ICR's evolution. I am certain that groundbreaking advances in cannabis science are still to come, and that the Institute will continue to play a leading role in shaping them.

Warm regards,

A handwritten signature in blue ink that reads "Chad A. Kinney". The signature is stylized and fluid.

Chad A. Kinney, Ph. D.
Director, Institute of Cannabis Research

BUDGET

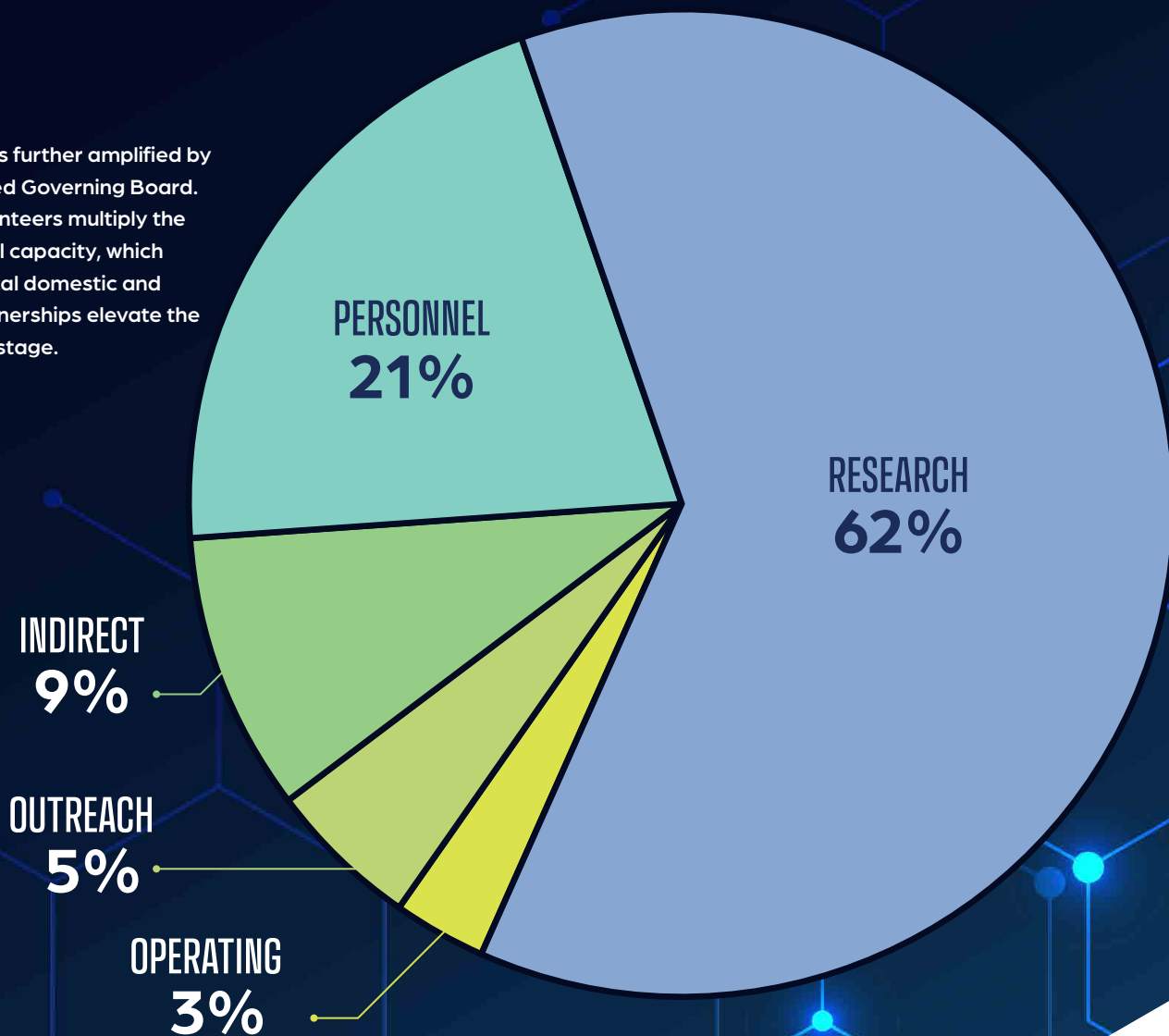
TO ADVANCE THE MISSION OF THE ICR

Driven by its core mission, the Institute of Cannabis Research (ICR) strategically directs its budget toward high-impact research and global knowledge dissemination. The ICR funds collaborative projects across Colorado's higher education institutions, engaging top-tier scientists and training future researchers.

RESEARCH	\$1,873,000	62%
PERSONNEL	\$633,000	21%
INDIRECT	\$275,000	9%
OUTREACH	\$152,000	5%
OPERATING	\$100,000	3%

Research findings are shared globally via the Journal of Cannabis Research, the National Cannabis Research Conference, and two monthly public webinars—outreach initiatives that establish Colorado as an international leader in cannabis science, public health, and policy. Together, research and outreach comprise over 67% of the FY26 budget, with the remainder sustaining a lean 5.0 FTE operational staff.

The ICR's impact is further amplified by its state-appointed Governing Board. These expert volunteers multiply the staff's operational capacity, which coupled with critical domestic and international partnerships elevate the ICR on the global stage.



MEET THE ICR STAFF



DR. CHAD KINNEY
Director

Dr. Kinney is entering his 20th year at Colorado State University Pueblo. In addition to serving as the Director of the ICR, Dr. Kinney is a tenured faculty member in the Chemistry Department where he served as Chair for 5 years. Dr. Kinney's research interests include environmental chemistry related to pharmaceuticals and personal care products as environmental contaminants as well as cannabinoid chemistry and analytical techniques associated with cannabinoids. As Director of the ICR, Dr. Kinney has strived to elevate the Institute from an organization at a regional comprehensive university to a driver of cannabis research at the state level and an organization with national prominence. He works with a talented staff, a dedicated Governing Board, and researchers from around Colorado to ensure that the Institute meets the role and mission that the state has charged the ICR with.



DR. JOHN WILLIAMSON
Associate Director of ICR Research Development

Dr. John Williamson is a distinguished research leader with a career defined by his expertise in medicinal chemistry, drug discovery, and academic research administration. He served as a tenured professor of medicinal chemistry at the University of Mississippi for 25 years, where he focused on developing therapeutic applications for natural products. Following his academic career, he served as the Branch Chief of Basic and Mechanistic Research at the NIH's NCCIH, where he received two prestigious Director's awards. He also serves as a consultant helping universities secure competitive federal funding. At CSU Pueblo, he re-established the Office of Research and Sponsored Programs, founded the Southern Colorado Institute of Transportation Technologies, and was pivotal in achieving Carnegie Classification "Research Colleges and Universities" status. Currently, he serves in a part-time capacity as the Associate Director of Research Development at the ICR.



DR. SANG-HYUCK PARK
Associate Director of Research

Dr. Sang-Hyuck Park is a plant molecular biologist specializing in cannabis physiology and genetics, with a particular focus on plant responses to environmental stress. Since joining the Institute of Cannabis Research (ICR) at Colorado State University Pueblo in 2017, he has authored over 25 peer-reviewed publications, filed one patent, and delivered more than 50 presentations at national and international conferences. Dr. Park is deeply committed to education and workforce development, actively mentoring CSU Pueblo students and leading the ICR Cannabis Plant Science and Cultivation webinar series. In his current role as Associate Director of Research, he leads interdisciplinary research initiatives and cultivates international collaborations to advance scientific understanding and innovation in cannabis research.



DR. JEFF SMITH

Strategic Partnership & Outreach Specialist

Professor Smith is an accomplished neuroscientist with research expertise focused on learning and memory and neurodegenerative diseases. This includes multiple publications in cannabis-related research. Professor Smith is an experienced leader on the CSU Pueblo campus as a former Director of the graduate program in the Biology Department and former Chair of the Biology Department. He was also part of the team that created the vision which led to the establishment of the ICR in 2016, as well as helped provide early leadership of the ICR as a member of the Institute's Steering Committee and served as the Interim Director of the institute for fiscal year 2022/2023.



DR. EUN-SOO KIM

Visiting Research Scholar

Dr. Kim joined the ICR as a visiting scholar in 2019 conducting a glandular trichome project. His background is in plant cell biology and development. Dr. Kim previously served as a professor of biology at Konkuk University in Seoul, Korea. He has focused on education and research of Cannabis for over 30 years. Currently, Dr. Kim has participated in a USDA-funded project as a Subject Matter Expert (SME) to develop the curriculum for the CBC Program. As an adjunct faculty member, he has been teaching newly developed courses for the CBC Program since the fall semester of 2025.



MS. JUSTYNA DUBEY

Grants Manager and Grants Accountant

Ms. Justyna Dubey joined the ICR in August 2025 as a Grants Manager and Grants Accountant. She brings 15 years of professional experience in finance, accounting, and auditing, including the last two and a half years at Colorado State University Pueblo, where she has served in financial and auditing roles. Ms. Dubey holds a Master's degree in Finance and Banking with a specialization in Accounting and Auditing from the University of Economics in Poland, earned in 2007, and is currently pursuing a Master of Business Administration at Colorado State University Pueblo. Outside of her professional responsibilities, she enjoys spending time in nature and gardening.



DR. BYEONG-RYEOL RYU

Postdoctoral Researcher

Dr. Byeong-Ryeol Ryu is a plant molecular biologist from Kangwon National University, South Korea, with research expertise in cannabis stress physiology and molecular genetics. During his tenure as a visiting scholar at the Institute of Cannabis Research (ICR), he contributed to collaborative efforts focused on hemp variety development and comparative genomics. His work integrates biochemical and molecular approaches to investigate stress responses in cannabis and develop strategies for their mitigation.



MS. GYEONGJU GIM

Research Scientist I

Ms. Gyeongju Gim earned her Master of Science degree from Kangwon National University in South Korea, where she built her expertise in cannabis science by developing molecular markers for sex determination and cultivar identification in Cannabis sativa. She subsequently served as a specialized researcher at a national research institution under the Rural Development Administration (RDA) in South Korea. Since joining the Institute of Cannabis Research (ICR) in January 2026, Ms. Gim has focused on quantitative cannabinoid analysis in hemp using UHPLC systems, delivering highly reliable data that supports multiple institute projects.



MS. JULIE POWELL

Operations Assistant

Ms. Julie Powell supports the overall operation and mission of the ICR. She has been a part of CSU Pueblo since December 2023. Ms. Powell completed her Master of Education in Student Development and Leadership in Higher Education at Angelo State University. She has over a decade of experience in education to include counseling and teaching in K-12 as well as grant-funded program management and work-based learning in higher education.



NEW RESEARCH PROJECTS

SUMMER 2026

1

A Window of Opportunity: Understanding Risks of Cannabis Use During Breastfeeding to Inform Cessation Strategies

[LEARN MORE ►](#)



BRIANNA MOORE, PhD

Assistant Professor, Department of Epidemiology Core
Research Co-Director for Environmental Sciences
LEAD Center • Colorado School of Public Health
CU Anschutz Medical Campus

2

Influence of Regular Cannabis Use on the Endocannabinoid Response to a Standardized Stimulus

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CHRISTOPHER BELL, PhD

Associate Professor, Department of
Health and Exercise Science
Colorado State University

3

Acute and Chronic Cannabis Use and Propofol-Based Sedation

[LEARN MORE ▶](#)

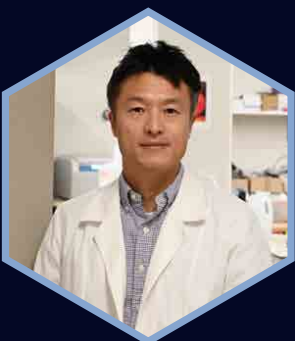


ANA FERNANDEZ-BUSTAMANTE, MD, PhD, FASA
Professor, Department of Anesthesiology,
Clinical Research Data Informatics Director
University of Colorado School of Medicine

4

A Vaccine for Cannabis: Inducing Thermal Stress Memory

[LEARN MORE ▶](#)



SANG-HYUCK PARK, PhD
Associate Director of Research
Institute of Cannabis Research,
Colorado State University Pueblo

5

Mechanism-Guided Add-on Cannabidiol (CBD) Therapy for Pediatric Epilepsy: Insights from Dravet Syndrome

[LEARN MORE ▶](#)



WON CHAN OH, PhD
Associate Professor, Department of Pharmacology
University of Colorado Anschutz Medical Campus



ACTIVE RESEARCH PROJECTS

2025-2028

1

Effects of Cognitive Decline, Age and Tolerance on Cannabis-Impaired Driving in Older Adults: Observational Study

LEARN MORE ►



CAROLYN DiGIUSEPPI, MD, PhD, MPH

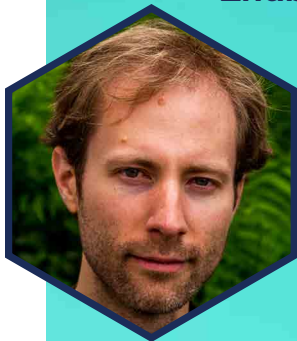
Professor of Epidemiology

Colorado School of Public Health, University of Colorado Anschutz Medical Campus

2

Diversity-Oriented Chemical Synthesis of CBD Metabolites: Enabling Translational Research

LEARN MORE ►



SAMUEL GOCKEL, PhD

Assistant Professor of Organic Chemistry

Colorado State University Pueblo

3

Safety and Efficacy of Oral Cannabis in Chronic Spine Pain

LEARN MORE ►



EMILY LINDLEY, PhD

Assistant Professor of Orthopedics;

Director of the Colorado Cannabis Research Consortium

Colorado School of Public Health, University of Colorado Anschutz Medical Campus



1

Edible Roulette or a Sure Bet? Evaluating Testing Standards and Consistency in Colorado's Edible Products



L. CINNAMON BIDWELL, PhD
Institute of Cognitive Science Faculty;
Assistant Professor
University of Colorado
Boulder

DUNCAN MACKIE, PhD

Director of Pharmacology &
Experimental Therapeutics
University of Colorado Boulder



2024-2027

LEARN MORE ►

2

Defining offspring cardiovascular consequences of cannabidiol (CBD) consumption during pregnancy



EMILY BATES, PhD
Associate Professor
of Pediatrics–
Developmental
Biology
University of
Colorado Anschutz
Medical Campus

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3

Examining the effects of pesticide treatments on pest populations, cannabinoid concentrations and pesticide residues in Cannabis sativa



PUNYA NACHAPPA, PhD
Associate Professor of
Entomology; Department
of Agricultural Biology
Colorado State University

4

Cannabis Use and Neuropsychological Functioning Among Emerging and Older Adults



RACHEL THAYER, PhD
Assistant Professor of
Neuropsychology
University of Colorado
Colorado Springs

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NIRIT BERNSTEIN, PhD
Professor, Agricultural
Research Institute
Volcani Center, Israel



LEARN MORE ►

5

Cannabinoids as a Treatment for Irritable Bowel Syndrome Symptoms



MELISSA REYNOLDS, PhD
Assistant Professor of Chemistry
Colorado State University

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1

Endocannabinoids in Children with Autism Spectrum Disorder and Changes with Cannabidiol (CBD) Treatment (2023)



NICOLE TARTAGLIA, MD

Professor of Pediatrics & Developmental Pediatrics
University of Colorado Anschutz Medical Campus

2

Investigation of Polycyclic Aromatic Hydrocarbons Resulting from Vaped or Dabbed Cannabis/Cannabis-Derived Products with Known Adverse Health Effects (2023)



ALISON BAUER, Ph.D.

Associate Professor Department of Environmental & Occupational Health
University of Colorado Anschutz Medical Campus

3

Developing Predictive Models to Distinguish Alcohol Use, Cannabis Use and Co-Use: An Exploration of Electroencephalography (EEG) Metrics and Traditional Intoxication Measures



HOLLIS KAROLY, PhD

Assistant Professor Department of Psychology
University of Colorado Anschutz Medical Campus



PATTI DAVIES, PhD

Professor Department of Occupational Therapy
Colorado State University

PROJECT SUMMARY

This study investigates how alcohol, cannabis, or their co-use impact brain activity and neurocognitive functions related to driving safety. Using a mobile lab, researchers recorded electroencephalography (EEG) data (brain activity) from 31 adults who used either cannabis, alcohol, or both alcohol and cannabis during memory and attention tasks across four timepoints, once before intoxication and 3 times post intoxication.

KEY FINDINGS

Brainwaves vs. Behavior: Although behavioral performance (accuracy and response times) showed minimal differences between groups, intoxication significantly altered brain activity.

Additive Impairment: Mixing alcohol and cannabis caused a larger change in the brain signals responsible for catching mistakes at peak intoxication than either substance alone, supporting an additive impairment effect.

The Brain Works Harder While Intoxicated: People who used alcohol (either alone or with cannabis) recruited more cognitive resources during memory, attention, and decision-making tasks than people who used only cannabis.

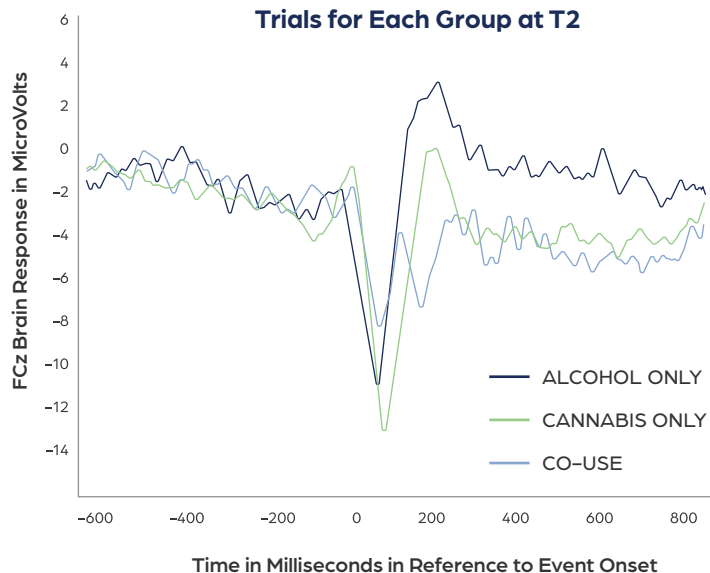
SIGNIFICANCE OF FINDINGS

Neural Sensitivity Over Behavior: The study shows that brain activity changes significantly due to intoxication even when behavioral performance remains largely unchanged. This suggests that a person can be cognitively impaired even if it is not obvious from looking at their outward actions.

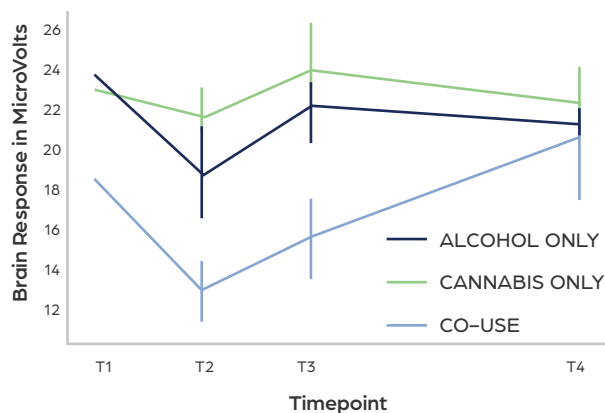
Evidence of Co-Use Danger: The study provides neurophysiological evidence of an additive impairment effect. This directly addresses a critical public safety gap regarding how co-intoxication severely compromises driving ability.

Roadside Testing Development: Current roadside sobriety tests are heavily tailored toward alcohol. Because each substance group showed unique neural signatures of impairment, these findings could ultimately help develop targeted behavioral roadside tests to accurately detect and discriminate impairment from alcohol, cannabis or their co-use.

Grand Averaged ERP's for Incorrect Trials for Each Group at T2



Pe by Group Across Timepoints



Developing *Cannabis* Irrigation and Nutrient Use Efficiency Best Practices



WILLIAM BAURERLE, PhD

Professor Department of Horticulture and Landscape Architecture
Colorado State University

PROJECT SUMMARY

When cannabis is grown indoors or in greenhouses, growers commonly rely on standard recipes for fertilization. However, such recipes do not always match the plant's actual needs, which can lead to over-fertilization, which is not cost effective and can introduce excess nutrients (pollutants) into the environment. This study employed an alternative method to determine the exact amount of fertilizer a plant needs based on how much water it uses (transpiration) and how much nutrient it absorbed in two cultivars of *Cannabis sativa* L.

KEY FINDINGS

Timing: Nutrient demand varied by specific cultivar and changes over time.

Leaf vs. Multi-Organ Analysis: Leaf tissue is not adequate as a measure of nutrient absorption. Assessing nutrients in various organs provides a much better predictor of nutrient demand.

Cultivar Comparison: Water use efficiency was similar between the two cultivars used in the study.

SIGNIFICANCE OF FINDINGS

Plant Diet: This research provides a guide for customizing the plants' diet.

Follow the Water Use: Tracking water use allows growers to feed the plants the exact amount of nutrients at the right time to meet their needs.

Benefits of Customized Diet: This keeps plants healthy and productive, saves money on fertilizer, and protects the environment.





DAVID ROOT, PhD

Assistant Professor Department of Psychology and Neuroscience
University of Colorado Boulder

PROJECT SUMMARY

This study investigates neurobiological mechanisms that underlie the rewarding or aversive properties of THC. The goal is to identify which neurons in the brain's reward center (the ventral tegmental area or VTA) are affected by THC, and how the neurons are physiologically altered by THC. This will clarify how the rewarding and aversive properties of THC are processed in the brain.

KEY FINDINGS

How the brains' reward center works: Rather than behaving as a single uniform system, the neurons in the VTA consist of two major functional populations: neurons that release only dopamine and neurons that co-release dopamine and glutamate.

Fine detail in understanding the underlying neurobiology: Dopamine-only neurons are important for understanding differences between what is expected to happen and what actually happened. On the other hand, glutamate-dopamine neurons were shown to be important in creating sustained motivational states and expectations.

Resolution of a major unknown: The study resolved a long-standing controversy in the neuroscience world regarding dopamine responses to aversive stimuli by demonstrating that glutamate-dopamine neurons are activated by aversive events, whereas dopamine-only neurons are inhibited by them. This shows that glutamate is important for motivation and reward pursuit, while dopamine is more important for learning about aversive outcomes.

SIGNIFICANCE OF FINDINGS

Understanding addictive behavior: This study demonstrated the neural mechanisms for learning about rewards and mistakes. This is a critical process for forming and breaking addictive behaviors and therefore provides a great deal of insight into understanding the detailed science of addiction and recovery.

The broader impact: This important research provides a new framework for understanding motivation, psychiatric disorders, addiction, and reinforcement learning models. It can therefore be used as a foundation for new translational drug-discovery research to treat these disorders.

The research was recently published in the peer reviewed biomedical literature:

Emily D. Prévost, Lucy A. Ward, Daniel Alas, Giulia Aimale, Sara Ikenberry, Katie Fox, Julianne Pelletier, Annie Ly, Jayson Ball, Zachary P. Kilpatrick, Kailyn Price, Abigail M. Polter, David H. Root. Untangling dopamine and glutamate in the ventral tegmental area, bioRxiv 2025.02.25.640201; doi: <https://doi.org/10.1101/2025.02.25.640201>



STUDENT PROJECTS

2026 STUDENT RESEARCH AWARD RECIPIENTS

The Institute of Cannabis Research (ICR) announced the recipients of the 2026 Student Research Awards, made possible through generous donor support. This year's awardees, Megan Brown of the University of Colorado Boulder, Siara Sitar of the University of Colorado Denver, and Daniel Morris of Colorado State University were selected through a competitive review process recognizing academic excellence, strong mentorship, and innovative cannabis research proposals aligned with ICR priorities.

The Student Research Award Program supports undergraduate and graduate students conducting original cannabis research in areas such as medical and clinical research, public health and safety, pharmacology and dosing, societal impacts of cannabis legislation, and agricultural and biological sciences. Award funding provides direct student support during the Summer 2026 research period, helping ensure that promising student researchers have the resources needed to advance their work.

ICR congratulates Megan Brown, Siara Sitar and Daniel Morris on this achievement and looks forward to the contributions their projects will make to cannabis research in Colorado and beyond.



MEGAN BROWN



SIARA SITAR



DANIEL MORRIS





RESEARCH AT THE ICR

RESEARCH TOPIC:

Enhancing Trustworthiness and Stability of CBD Products

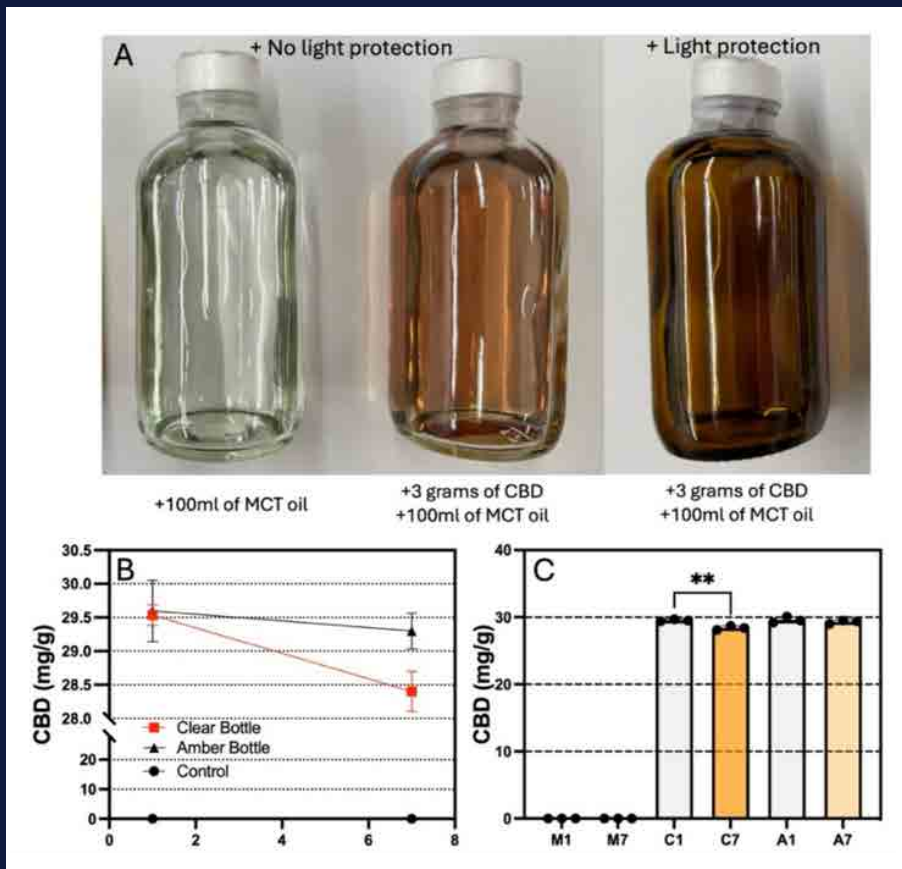


FIG. 1

Reduction of CBD amount over the five weeks of light exposure.

A

The panel, above left, shows no discoloration of MCT oil only, while the middle panel demonstrates the discoloration of CBD oil into brown after 5 weeks of light exposure, and the right panel indicates no discoloration of CBD oil in a light-protected amber bottle.

B

The line graph illustrates the decrease in CBD amount in a clear bottle (colored in red) over a five week period after light exposure (One-way ANOVA, $n=3$, $p<0.05$).

C

Conversely, the CBD oils stored in an amber bottle showed no significant decrease compared to the CBD samples collected at week 1 (One-way ANOVA, $n=3$, $p>0.05$). Abbreviations: M for MCT oil in a clear bottle, C for CBD oil in a clear bottle, and A for CBD oil in an amber bottle. The number after the alphabet indicates the week of sample collection.

SANG-HYUCK PARK, PhD
Associate Director of Research



Ensuring the quality, safety, and consistency of cannabis-derived products remains a central priority for the Institute of Cannabis Research (ICR). Dr. Sang-Hyuck Park's research addresses a critical gap in the rapidly expanding cannabidiol (CBD) market: the lack of reliable data on product stability, degradation, and real-world potency over time.

CBD products, particularly tinctures, are widely used for their therapeutic potential. However, recent studies have highlighted inconsistencies in labeling accuracy and contamination risks. Beyond these issues, an emerging concern is the instability of CBD after purchase, especially during storage and repeated use. Consumers and researchers frequently observe color changes in CBD oil—from clear to yellow and eventually to dark brown—raising important questions about chemical degradation, potency loss, and the formation of unknown byproducts.

Dr. Park's research focuses on how environmental factors such as light exposure, oxygen, and temperature influence CBD stability. Controlled experiments demonstrate that CBD oil undergoes rapid discoloration and measurable degradation under continuous light exposure. Within days, samples change color and show a significant reduction in CBD concentration. Notably, early-stage degradation did not produce detectable levels of cannabinol (CBN), suggesting the formation of intermediate oxidized metabolites rather than direct conversion into known degradation products. This finding reveals a previously underexplored pathway of cannabinoid transformation.

The study also confirms that storage conditions play a decisive role in maintaining product quality. CBD samples stored in light-protected amber containers showed minimal degradation compared to those stored in clear containers, underscoring the importance of proper packaging and handling.

To systematically investigate these changes, the research integrates advanced analytical tools, including High-Performance Liquid Chromatography (HPLC), Mass Spectrometry (MS), Nuclear Magnetic Resonance (NMR), and UV-Visible spectroscopy. A key innovation is the development of a color-based predictive model that correlates visible color changes with CBD degradation levels. This approach offers a practical, accessible indicator of product quality and remaining potency for both consumers and manufacturers.

The impact of this work extends beyond fundamental science into applied outcomes. The findings support the development of evidence-based storage guidelines, improved labeling practices, and enhanced quality control standards across the cannabis industry. By addressing product variability and degradation, this research contributes directly to improving consumer safety and trust.

Importantly, the outcomes have advanced to both academic and translational milestones. The findings have been submitted to Industrial Crops and Products and are currently under second revision. In parallel, this innovation has resulted in the filing of a U.S. Provisional Patent Application through CSU STRATA; further details can be found at <https://csustrata.org/technology-transfer/available-technology/smart-color-labels-for-cbd-oil/>

Overall, this work represents a significant step toward advancing the trustworthiness, transparency, and scientific foundation of CBD products, aligning with ICR's mission to deliver impactful, evidence-based cannabis research.





My research is built around this perspective, focusing on how Cannabis processes and responds to combined environmental stresses and what those responses reveal about tolerance mechanisms at the physiological, biochemical, and molecular levels.

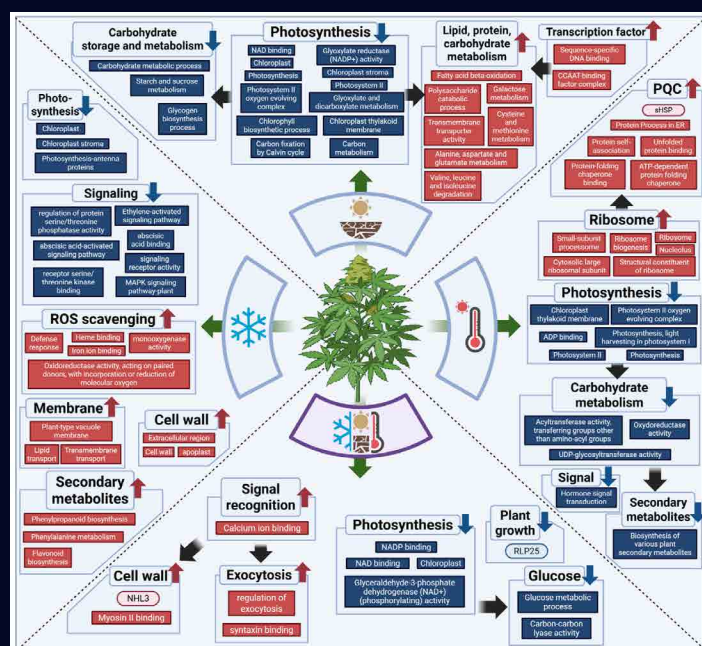
Using *Cannabis sativa* L. cv. Pink Pepper, a cultivar independently bred and genomically characterized in collaboration with Kangwon National University, South Korea, I examine how different stress combinations reshape a broad range of biological processes, including plant growth, antioxidant defense, osmotic adjustment, photosynthetic activity, gene expression, and cannabinoid metabolism. Pink Pepper serves not only as an experimental model but also as a genetically defined reference point, allowing responses observed under stress to be interpreted against a well-characterized genomic background. By integrating transcriptomic data with

A central output of this work is a draft cannabis stress map constructed through integrated transcriptome analysis and differential gene expression pattern analysis. This map enables systematic comparison across stress types, distinguishes shared response modules from those that are stress-specific, and highlights molecular and metabolic markers that may serve as indicators of stress tolerance.

Importantly, it reframes stress responses as interconnected biological networks rather than isolated observations, making it possible to trace how changes in one process, such as a shift in photosynthetic efficiency or a reorganization of antioxidant metabolism, propagate through and influence other cellular systems, including cannabinoid biosynthesis and primary growth pathways.

As a postdoctoral researcher at the ICR, I aim to contribute to the growth of Colorado's cannabis industry by producing research that directly addresses the challenges faced by local cultivators and breeders, with the goal of supporting the development of regionally adapted cultivars and evidence-based cultivation practices.

Hemp Genomics, Cannabinoid Biosynthesis, Abiotic Stress Response, Chemotype–Environment Interaction, Marker–Assisted Breeding





Gyeongju Gim earned her Master of Science degree from Kangwon National University in South Korea, where she built her expertise in cannabis science by developing molecular markers for sex determination and cultivar identification in *Cannabis sativa*. She subsequently served as a specialized researcher at a national research institution under the Rural Development Administration (RDA) in South Korea. There, she evaluated the growth characteristics and conducted compound analyses of medicinal plants, such as Safflower (*Carthamus tinctorius* L.) and Korean Mint (*Agastache rugosa*), developing deep practical expertise in operating UHPLC systems.

Joining the Institute of Cannabis Research (ICR) in January 2026, Ms. Gim currently focuses on the following core areas: 1) She manages the quantitative

analysis of cannabinoids in hemp samples using established UHPLC systems, providing highly reliable analytical data essential for the smooth progression of various projects within the institute. 2) She leads a project to establish a standardized laboratory rearing system for the tobacco hornworm (*Manduca sexta*), a widely used biological research model. She is defining optimal rearing environments and management standards for its entire life cycle from egg to adult and building a comprehensive baseline database by systematically documenting morphological and behavioral traits at each stage. This precisely recorded data will serve as a crucial foundation for future research in insect physiology and plant-insect interactions, as well as for selecting optimal developmental stages for educational model systems.

RESEARCH TOPIC:

Life Stages of *Manduca sexta* from Egg to Adult

FIG. 1

A: Eggs at early and late developmental stages

B: Neonate larva emerging from egg

C: Representative larval instars showing progressive growth

D: Pupa

E: Adult moth with folded wings and expanded wings





SAMANTHA GREGORY

University of Colorado Anschutz Medical Campus

"Being involved in cannabis research has been an incredible opportunity for my growth as a researcher. Through my work studying older adult driving and cannabis use, I have gained valuable experience in research coordination, data collection, and epidemiologic methods while learning how to contribute effectively to a collaborative research team. This experience has strengthened my critical thinking skills, attention to detail, and ability to manage research responsibilities. Most importantly, it has shown me the impact that high-quality research can have on advancing public health knowledge and informing policy. The skills and confidence I have developed through this work have prepared me well for future research opportunities and my continued pursuit of a career in epidemiology and public health."

HANNAH KARAM

University of Colorado Anschutz Medical Campus

"As a post-doctoral fellow and pharmacist, I have had the privilege of learning from my mentors, Dr. Rachael Rzasa Lynn, Dr. Emily Lindley, and Dr. Jacci Bainbridge while contributing to a variety of clinical and research projects. My primary project is a study evaluating the effects of THC and/or CBD on back pain, through which I have gained experience in clinical research, regulatory compliance, investigational drug management, patient counseling, medication dosing and administration, patient safety monitoring, pharmaceutical compounding, and controlled substance accountability. The most rewarding part has been expanding my patient-centered care skillset by individualizing medication regimens based on patient-specific factors, an experience that has deepened my appreciation for precision medicine and the impact of tailored therapeutic approaches on patient outcomes."



FUTURE RESEARCHERS & INNOVATORS

DANIEL RODGERS

Colorado State University Pueblo



"Performing research under the ICR has been a dream of mine since news of its inception in 2016. This dream came to fruition through the undergraduate research program at CSU Pueblo in 2020, where I began assisting in soil, light, and antioxidant studies on flowering hemp in the greenhouse. I was also able to co-author my first publication in a CBD human study under Dr. Diawara Moussa. From there, I moved into the lab performing biological studies on the tobacco hornworm under Dr. Sang-Hyuck Park. I am now running organic synthesis experiments to further study cannabidiol and its metabolites on mammalian cell receptors to examine biological activity along with potential environmental applications for my thesis research under Dr. Samuel Gockel. I have gained so many skills through the ICR that have emboldened my confidence as a cannabis scientist, which I am eager to continue carrying forward."

CHICO RYDER

Colorado State University Pueblo



"Working with the ICR has been an incredible experience and has introduced me to remarkable people, including my advisor, Dr. Gockel. Through his guidance, my confidence has grown immensely, both in the lab and in myself as a researcher. The hands-on work and opportunities I have gained through this program have expanded my knowledge and abilities and given me new experiences that general classes alone could not. Without the ICR and Dr. Gockel's support, I would not be where I am today, about to get my master's degree in Cannabis Biology and Chemistry. After having cancer myself at a young age, this program has helped me pursue and achieve my dreams of researching cannabis and cancer, and it has shown me that I am capable of building a future in science."



PARTNERSHIPS

NEW PARTNERSHIPS

At the Institute of Cannabis Research (ICR), we are witnessing an inspiring shift in how we approach cannabinoid science. As the field matures, we are moving away from isolated studies and toward a unified national framework built on the strength of our collective expertise. Dr. Williamson has taken a leadership role in deepening the ICR ties with esteemed organizations—including the **Center for Medicinal Cannabis Research (CMCR)**, the **Consortium for Medical Marijuana Clinical Outcomes Research (CCORC)**, and the **Mid-Atlantic Cannabinoid Research Collaborative (MACRC)**.

These collaborations are far more than just networking; they are about building a robust foundation for the future of medicine. By bridging gaps among regional research hubs, we can integrate diverse geographic insights, ensuring our data reflects a wide range of patient populations and environments. This cross-pollination of ideas allows us to harmonize our methodologies and share essential resources, which is the only way to produce the high-quality, reproducible science required for regulatory and clinical acceptance.

Furthermore, when our institutions speak with a unified, science-backed voice, we become a much more credible resource for policymakers and healthcare professionals. This collective influence is helping to shift the national conversation away from anecdote and toward evidence-based practice. Perhaps most importantly, we are fostering the next generation of innovators. Through joint symposia and shared training opportunities, we are building a versatile, interconnected talent pool ready to tackle the complexities of cannabinoid science for years to come.

While each of our organizations maintains its own unique focus, from Florida's extensive clinical outcomes data (CCORC) and the long-standing pharmacological expertise of the Mid-Atlantic region (MACRC) to the clinical research leadership of the CMCR, we are all guided by a shared "Collaborative Spirit." By coordinating our efforts, we are ensuring that the future of cannabis medicine is built on a foundation of transparency, rigor, and collective progress. We look forward to the breakthroughs this partnership will undoubtedly bring.



Center for
Medicinal Cannabis Research

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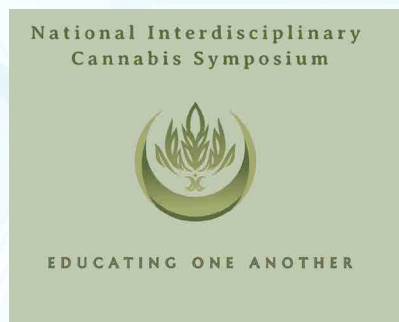


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CONTINUING PARTNERSHIPS



NATIONAL INTERDISCIPLINARY CANNABIS SYMPOSIUM

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Excitement is growing for the combined meeting of the **National Cannabis Research Conference** (NCRC) and the **National Interdisciplinary Cannabis Symposium** (NICS), taking place October 19–21, 2026, in San Diego, CA. For over a year, the Institute for Cannabis Research (ICR) and NICS leadership have collaborated to prepare for this conference. The event will feature more than 200 presentations; it stands as one of the largest and most comprehensive interdisciplinary cannabis gatherings in the nation. NICS brings a vital focus on cannabis legislation, regulation, and American jurisprudence, drawing judges, law enforcement, academia, attorneys, and cannabis industry associations. This unique legal and policy focus perfectly complements the scientific and clinical research driving the ICR's NCRC. Together, these aligned symposia offer a premier environment where scientists, clinicians, legal experts, and regulators can unite to shape the future of the cannabis industry.



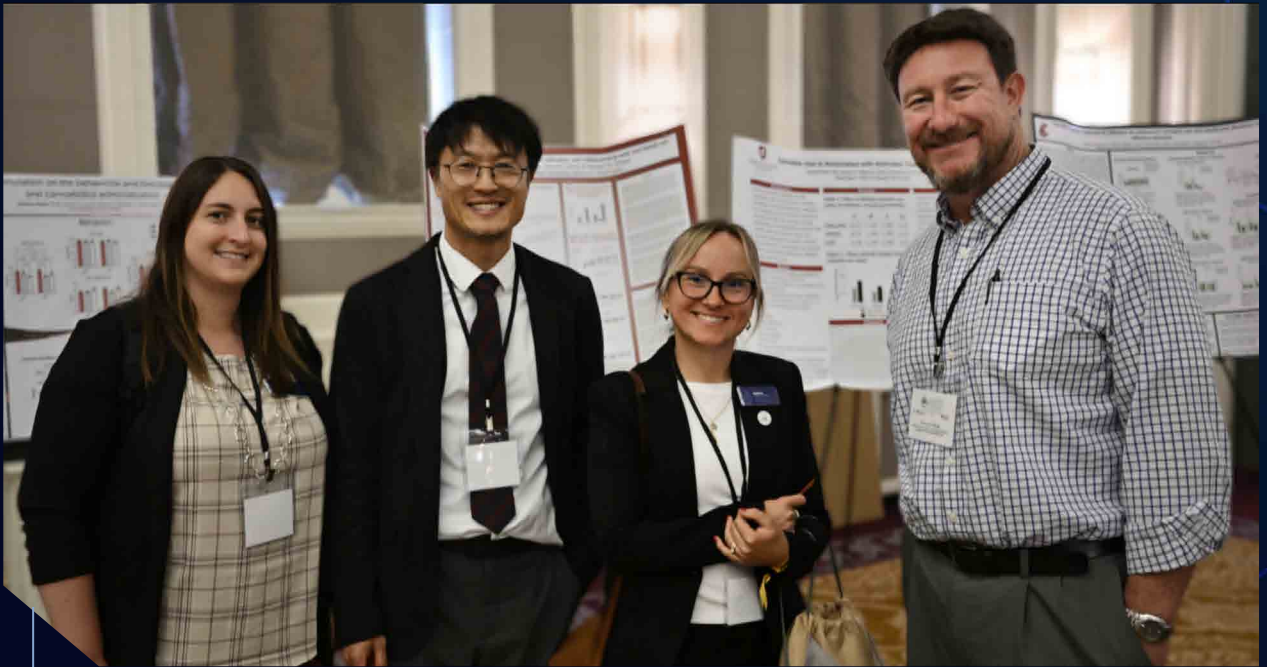
ASSOCIATION OF CANNABIS RESEARCH CENTERS

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The continued partnership between the **Institute of Cannabis Research** (ICR) and the **Association of Cannabis Research Centers** (ACRC) is vital for driving rigorous, evidence-based advancements in the field. By aligning with this network, the ICR gains access to a collaborative infrastructure that facilitates the exchange of data, methodologies, and expertise across top-tier academic and research institutions in the U.S. and Canada. This partnership, championed by Dr. Williamson for the ICR, is essential for identifying and addressing critical gaps in health-related cannabis research, ensuring that studies remain high-quality and clinically relevant. Furthermore, membership in the ACRC enables the ICR to contribute to a unified front, effectively communicating research efforts to the broader healthcare community and policy stakeholders. Through quarterly meetings and coordinated efforts, this partnership fosters a dynamic environment where researchers can troubleshoot challenges and synchronize their investigations into the therapeutic potential and risks of cannabis. This collective approach not only accelerates the pace of discovery but also strengthens the validity of findings, ultimately helping to translate complex scientific data into actionable clinical guidance. By remaining an active member, the ICR solidifies its position at the forefront of the evolving landscape of cannabis science, ensuring its work informs public health policy and patient care standards.



CANNABIS RESEARCH CONFERENCE



RECAP OF CRC 2025

The 9th Annual Cannabis Research Conference (CRC) was held October 6–8, 2025, at The Sentinel Hotel in Portland, Oregon, marking another milestone in the conference’s evolution as a premier national and international forum for cannabis research. The event welcomed more than 300 attendees from over 35 U.S. states and 9 countries and featured 140+ presentations across seven multidisciplinary tracks. With strong sponsor engagement and a hybrid-accessible format for virtual presenters, CRC 2025 delivered high-impact programming while expanding accessibility and reach.

The scientific program was highlighted by two distinguished keynote presentations. Dr. Punya Nachappa, Professor of Agricultural Biology at Colorado State University, delivered the Opening Plenary Address, Building Sustainable and Resilient Cannabis sativa Production: Trends, Challenges, and Future Perspectives, focusing on agricultural sustainability and pest management. The Mechoulam Lecture was presented by Dr. Aron H.

Lichtman, whose talk, The Endogenous Cannabinoid System: Budding Targets to Treat Pain, explored emerging therapeutic targets and the translational implications of cannabinoid research.

Equity and inclusion were core priorities throughout CRC 2025, reflected in a diverse speaker lineup, equity-focused panels, and inclusive session design. Special features—including a poster competition for emerging researchers, research roundtable discussions, a private tour of Phylos Labs, and a rooftop reception—further strengthened collaboration and community building.



LOOKING AHEAD TO NCRC 2026

The 10th Annual
National Cannabis
Research

Conference (NCRC),
held in conjunction
with the National
Interdisciplinary
Cannabis Symposium
(NICS), is a premier
interdisciplinary event
scheduled for October
19–21, 2026, at the
DoubleTree by Hilton
Hotel San Diego –
Mission Valley. Hosted

by the Institute of Cannabis Research (ICR) at Colorado State University Pueblo, in collaboration with the National Interdisciplinary Cannabis Symposium, the conference serves as a central hub for scientists, policymakers, legal experts, and industry leaders to discuss the latest advancements in cannabis and hemp research. The event features dozens of sessions across more than 12 disciplines, aiming to bridge the gap between scientific findings and practical applications in medicine, law, policy, and industry. The program includes presentations from global leaders, highlighted by featured sessions from Dr. Nora Volkow, Director of the National Institute on Drug Abuse (NIDA), and Dr. Melanie Kelly, a prominent researcher in cannabinoid-based therapeutics and drug discovery from Dalhousie University, alongside a variety of session formats such as legal and clinical roundtables, social equity summits, and scientific panels on topics like impairment detection and toxicology. Attendees will also have the opportunity to participate in networking receptions and tours through the Center for Medicinal Cannabis Research at UC San Diego, all aimed at fostering evidence-based dialogue to shape future scholarship, legislation, and industry practices.



10TH ANNUAL
**NATIONAL CANNABIS
RESEARCH CONFERENCE**
OCTOBER 19-21, 2026 • SAN DIEGO, CALIFORNIA
DOUBLETREE BY HILTON HOTEL - MISSION VALLEY

HOSTED BY
Institute of
**Cannabis
Research**
COLORADO STATE UNIVERSITY PUEBLO



IN CONJUNCTION WITH
National Interdisciplinary
Cannabis Symposium
EDUCATING ONE ANOTHER



OUTREACH & IMPACTS

OF THE ICR

ICR CERTIFICATE

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The ICR has implemented its Certificate of Foundational Studies in Cannabis

The certificate provides fully online educational opportunities at an entry level for anyone desiring to increase their knowledge for engagement with cannabis in medicine, public health, agronomy, chemical analysis, research, and research regulations. The program is also appropriate for anyone with a lay interest in cannabis for medicinal or other purposes and is fully accredited by the **Colorado Commission on Higher Education** and the **Higher Learning Commission of the United States**.

The 16-credit certificate includes 6 courses which are being delivered in partnership with **Colorado State University Pueblo Extended Studies**. The course list includes:

ICR 101, Introduction to the Scientific Basis for the Regulation of Cannabis

ICR 102, Basic Human Physiology of Cannabis Consumption

ICR 103, Introduction to the Analytical Chemistry of Cannabinoids and Terpenes

ICR 104, Introduction to Agriculture and Cultivation of Cannabis

ICR 105, Introduction to Hemp Materials

ICR 106, Introduction to Cannabis Science and Research

ICR 102 was launched in the fall of 2025, followed by ICR 101 and 104 in the spring of 2026. ICR 103, 105 and 106 are set to begin this summer. The program is scheduled so that students can complete the entire certificate in one calendar year, or may optionally take selected coursework without receiving the full certificate. The program is eligible for federal and state financial aid.

RESEARCH ROUNDTABLE

The Colorado Cannabis Research Roundtable was a uniquely groundbreaking event developed by the Institute of Cannabis Research which brought together sixty leading cannabis experts from Colorado's regulatory, policy, scientific and industry sectors for the purpose of identifying the most important priorities needed to guide future cannabis research that will inform best outcomes for Colorado. Outcomes provided research priorities to guide development of Colorado's regulated cannabis marketplace with aims to ensure economic sustainability, protection of public health, and informed evidence-based policymaking that will benefit, serve, and protect our citizens.

[LEARN MORE ►](#)

SYMPOSIUM ON CANNABIS AND HUMAN HEALTH: SCIENCE, CLINICAL CARE, AND PUBLIC HEALTH

The ICR hosted a Symposium on Cannabis and Human Health on the CSU Pueblo campus. The half day event provided information on current public health and medical science advances in cannabis and featured lectures by Dr. Richard Holman, MD, MPH, Cannabis Projects Manager and Medical Consultant for the Colorado Department of Public Health and Environment; Dr. Brad Roberts, MD FAAEM FACEP, Emergency Medicine Physician for Southern Colorado Emergency Medicine Associates and Chief Medical Officer for the Pueblo Department of Public Health and Environment; Dr. Libby Stuyt, MD, Board Certified Psychiatrist; and Mike Hennesy, MS, Cannabis Science Consultant. The audience was comprised of ninety participants including 65 CSU Pueblo faculty and students and 26 community members. Organizations including Health Solutions, the Pueblo Department of Public Health and Environment, and various mental health providers were well represented among the community participants. Participants received Continuing Education Credits for attending.



SOCIAL MEDIA &
EMAIL MARKETING STATS



OUTREACH & IMPACTS

OF THE ICR

RESEARCH WEBINAR

Co-hosted by the ICR and the Lambert Center at Thomas Jefferson University, the **Cannabis Research Webinar Series** functions as a premier nexus for high-level cannabis scholarship. The series is designed to accelerate the translation of academic research into clinical practice, featuring insights from the nation's most distinguished scientific experts. The series provides an unbiased, evidence-driven evaluation of the industry's most critical vectors: the safety and efficacy of cannabinoid therapeutics, the neurobiology of cannabis-related disorders, and the epidemiological implications of global regulatory reform. By delivering a vital repository of grant-funded, peer-reviewed findings, the series empowers health officials and researchers to ground their medical and policy directives in rigorous scientific reality. This 2025-26 series has been honored to host an elite assembly of contributors, including leaders such as **Dr. Igor Grant** and **Dr. Thomas Marcotte** (UC San Diego), **Dr. Shanna Babalonis** (University of Kentucky), **Dr. Francesca Filbey** (UT Dallas), **Dr. Almut Winterstein** (University of Florida), and **Dr. Margaret Haney** (Columbia University). Dr. John Williamson has served as the producer of the Cannabis Research Webinar Series since its inception.

ICR CO-HOSTED RESEARCH & PLANT WEBINARS



20+
PRESENTERS



1,000+
ATTENDEES



20+
COUNTRIES+



300+
ASYNCHRONOUS
VIEWS



ICR CANNABIS PLANT SCIENCE AND CULTIVATION WEBINAR SERIES: ADVANCING GLOBAL RESEARCH & COLLABORATION

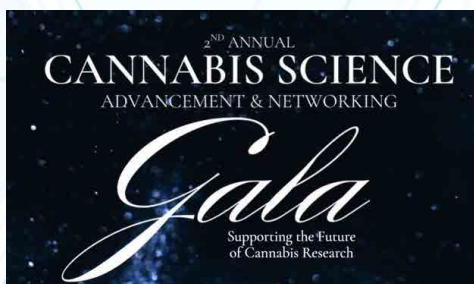
The ICR Cannabis Plant Science and Cultivation Series is a data- and science-driven webinar program launched in February 2022. The series is led by Dr. Sang Park, Associate Director of Research at the Institute of Cannabis Research (ICR) and has been co-chaired since its inception by Professor Dr. Nirit Bernstein of the Volcani Institute, Israel.

As of May 2026, the series has featured 36 speakers representing diverse areas of cannabis science, including cultivation, genetics, and chemistry. Speakers include industry professionals, academic faculty, and leading experts from the United States and internationally, providing comprehensive and up-to-date insights into cannabis strains, genomics, and industrial applications.

The webinar series serves as a platform for advancing cannabis science through interdisciplinary dialogue, fostering academic and industry networks, and supporting the education and development of emerging scientists. With participation from experts in the United States as well as countries such as Italy, Colombia, and Canada, the series continues to expand its global reach and impact.

ICR welcomes additional experts to contribute to this growing initiative and encourages inquiries from those interested in sharing their knowledge or participating as speakers in future sessions.

2ND ANNUAL CANNABIS SCIENCE ADVANCEMENT & NETWORKING GALA



The ICR held its Second Annual Cannabis Science Advancement and Networking Gala to support the future of Cannabis Research in May at Baldoria on the Water in Lakewood

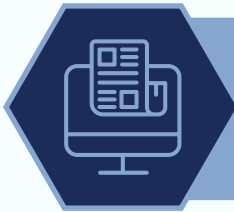
Colorado. The event featured a keynote address by Ean Seeb, the Governor's Special Advisor on Cannabis and Natural Medicine for the State of Colorado. Paige Figi, an advocate promoting the use of CBD to treat childhood epilepsy, introduced this year's ICR Award of Research Excellence recipient. Ryan Vandrey, PhD, a world-leading cannabis researcher and Professor of Psychiatry and Behavioral Sciences at John Hopkins School of Medicine also spoke as he accepted the ICR Award of Research Excellence. Several notable cannabis research scientists from Colorado were also honored as ICR Research Fellows, including Drs. Cinnamon Bidwell, Ashley Brooks-Russell, Angela Bryan, Hollis Caroly, Stephanie McGrath, and Punya Nachappa. In addition, several Student Research Awards were given to PhD students from CU-Boulds, UC Denver, and CSU Ft. Collins.

The event also included a silent auction and was sponsored by 35 different organizations including public and private entities such as CU-Boulder, CSU-Pueblo, Balanced Health Botanicals, and Village Farms. Over 100 prominent Colorado leaders in cannabis science and business attended the event which raised funds to support future cannabis research sponsored by the ICR.



ICR IN THE NEWS

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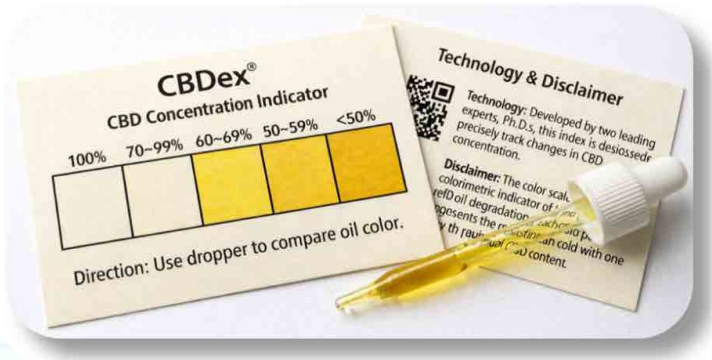
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Cannabis Business Times



ICR Advances Translational Innovation with U.S. Provisional Patent Filing on Smart CBD Label Technology

The Institute of Cannabis Research (ICR) is pleased to announce a significant translational milestone with the filing of a U.S. Provisional Patent Application in April 2026 for an innovative technology developed through its research programs. The application, submitted through CSU STRATA, underscores ICR's continued commitment to advancing practical, industry-relevant solutions grounded in rigorous scientific research.

The patented innovation, titled "Smart Color Labels for CBD Oil," represents a novel approach to enhancing product quality, safety, and consumer transparency within the cannabis industry. By translating cutting-edge research into applied technology, this development highlights the growing impact of ICR's work beyond the academic sphere and into real-world applications.

This milestone aligns with the Institute's strategic focus on innovation and industry collaboration, reinforcing its role as a leader in cannabis research and technology development.

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ICR is actively seeking business partnerships to further develop, validate, and commercialize this technology. Interested partners can find additional details through CSU STRATA's technology transfer portal:



DAVID A. GORELICK, MD, PhD, DLFAPA, FASAM

Editor in Chief

Journal of Cannabis Research



GLOBAL CONTRIBUTION TO CANNABIS SCIENCE

The Journal of Cannabis Research (JCR) began accepting manuscripts in September, 2018. This 9th year of publication significantly improves the journal's solid growth and international scope. We received 329 manuscripts from 72 different countries in the past year. Thus far, 112 of those manuscripts from 36 different countries have been accepted for publication. These papers reflect the broad interdisciplinary scope of the journal, encompassing all aspects of preclinical and clinical cannabis, cannabinoid, and endocannabinoid science, as well as cannabis agriculture, economics, regulation, public health, business and history.

JCR is the only international in scope, multi-disciplinary, open-access journal in the cannabis field. Our distinguished editorial board of 83 cannabis experts hail from 24 countries on six continents (still working on Antarctica). Anyone in the world can find our articles on our web site, Google or on PubMed and read them without paying a fee. This makes our articles readily accessible to those in low-income regions or without access to an academic library. In this past year, articles in JCR (from any publication year) received 991,967 total views (132% increase vs. PY) in 230 countries and territories, with an average of 2,062 views per article.

Articles published in FY 2026 received wide news and social media attention. Articles were mentioned 1641 times (1,326 social media, 310 news sites [e.g., Forbes, AP News, New York Post, The Conversation], and one policy document), with an average of 42 mentions per article. JCR was the second most likely scientific journal to be cited in news stories about cannabis, trailing only the Journal of the American Medical Association. The enhanced visibility and international reach of articles published in JCR is an advantage to authors when deciding on where to submit their manuscripts for publication.

JCR is included in all major online indexing services, e.g. PubMed, Web of Science, and Scopus used by researchers, and has a 2-year impact factor of 3.8 and a 5-year impact factor of 4.8 as calculated by Clarivate (the industry standard). The impact factor is a measure of the number of citations of articles in the journal and reflects the journal's influence in the research community. The Journal is ranked 8th among all substance use journals, 17th among health policy journals, in the top 25% of public health, and in the top 35% of pharmacology journals.

JCR is a member of two respected international societies: Committee on Publication Ethics and International Society of Addiction Journal Editors. Our inclusive manuscript acceptance rate of 55% this year and 5200 article citations after almost 7 years of publication are similar or better than comparable, more established journals in our field.



RESEARCH PUBLICATIONS FOR ICR SUPPORTED PROJECTS

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