

# MEDICAMENT

## MEDICAL MARIJUANA RESEARCH NEWSLETTER



FALL 2022

**WELCOME TO  
MEDICAMENT,**  
the Consortium for Medical  
Marijuana Clinical Outcomes  
Research's quarterly newsletter.

The Consortium, founded by  
the State of Florida, conducts,  
disseminates, and supports  
research on the use and effects  
of medical marijuana on patient  
outcomes.

*In the Fall 2022 issue of  
MEDICAMENT:*

- Cannabis Clinical Outcomes  
Research Conference  
(CCORC)
- Research Grants Program
- Evidence and Research  
Announcements
- Medical Marijuana and Me  
(M<sup>3</sup>)
- Get Involved in Research



Consortium for  
Medical Marijuana  
Clinical Outcomes Research

To learn more about the  
Consortium and our programs,  
visit us at [mmjoutcomes.org](http://mmjoutcomes.org).

### SAVE THE DATE: CANNABIS CLINICAL OUTCOMES RESEARCH CONFERENCE (CCORC) 2023



#### CANNABIS CLINICAL OUTCOMES RESEARCH CONFERENCE 2023

MAY 18-19, 2023 | ORLANDO, FL

*Learn, Share, and Advance Medical Marijuana Research*

MORE INFORMATION AT [CCORC.MMJOUTCOMES.ORG](http://CCORC.MMJOUTCOMES.ORG)



#### CCORC 2022 Summary Available Now

Did you miss CCORC 2022?

[Read the summary brochure here >](#)

#### CCORC 2022 Proceedings and Abstracts Published

The proceedings and abstracts for CCORC 2022 have been  
published in the official journal of the Consortium, Medical  
Cannabis and Cannabinoids.

[Read CCORC 2022 proceedings here >](#)

[Read CCORC 2022 abstracts here >](#)

**STAY IN TOUCH FOR CCORC UPDATES AT  
[ccorc.mmjoutcomes.org](http://ccorc.mmjoutcomes.org)**

# RESEARCH GRANTS PROGRAM

Upcoming Request for Proposals: 2023 Grants Program



Consortium for  
Medical Marijuana  
Clinical Outcomes Research

**COMING SOON**

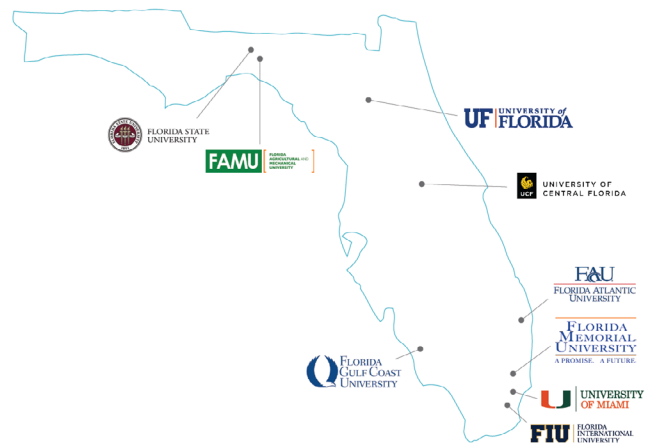
# 2023 REQUEST FOR PROPOSALS



The Consortium for Medical Marijuana Clinical Outcomes Research (Consortium) provides awards to support clinical and translational research related to Medical Marijuana (MMJ) to investigators within member institutions.

Research proposals focused on the clinical outcomes of MMJ use, effect of MMJ use in reducing opioid dependence, routes of administration, interactions of MMJ with other drugs/medications, epidemiology research, and evaluating components of MMJ/cannabis are encouraged.

The research grant award mechanism will consider fully developed research studies that generate novel evidence, as well as studies intended to facilitate the collection and/or analysis of preliminary data that will support future extramural funding applications.



**LETTER OF INTENT  
DEADLINE  
FEB 1<sup>ST</sup>, 2023**

**VISIT [MMJOUTCOMES.ORG/RESEARCH](https://mmjoutcomes.org/research) FOR DETAILS  
ON THE RESEARCH GRANTS PROGRAM**

## Details on the 2022 Research Awards

In June 2022, the Consortium awarded 8 grants to researchers from 4 member institutions for our fourth research grants cycle.

The 2022 awardees, their affiliations, along with the project narratives and anticipated impact of their proposed research, are presented below.



### **Cannabinoid use in young adults with Crohn's Disease**

PI: Naueen A. Chaudhry, MD  
University of Florida

*Project narrative:* College-aged patients with Inflammatory Bowel Disease (IBD) are a vulnerable population with unique needs during their transition from their home town to college with changes in their support system, medical care and new academic and social challenges. In this study, we are using a mixed methods approach to study how college-aged students will differ in their attitudes and cannabinoid use patterns than an older cohort, and hence may also experience different outcomes.

*Anticipated impact:* Emerging adults, although physically developed, remain in an emotional, cerebral and psychological developmental phase during this crucial part of their life. A sharp increase in marijuana use has been reported in this age group. Our study, with the additional layer of qualitative data will provide valuable insights into the patterns and outcomes of marijuana use in young college-aged adults with Crohn's Disease.



### **Quantitative assessment of complex drug-drug interaction networks involving medical cannabis products in special populations**

PI: Rodrigo Cristofolletti, PhD  
University of Florida

*Project narrative:* Patients receiving medical cannabis are likely to be taking other concomitant drugs and thus, risks related to Drug-Drug Interactions (DDIs) should be carefully assessed. An emerging body of evidence from *in vitro* studies has predicted inhibitory effects of cannabinoids on several drug metabolizing enzymes. However, clinical studies designed to assess DDIs involving major cannabinoids are scarce in the literature, partially due to the small number of approved cannabinoid products by the Food and Drug Administration, the high costs associated with performance of confirmatory clinical DDI trials, and legal and ethical issues surrounding medical cannabis use. We will apply modern *in silico* modeling techniques to estimate DDI risks related to cannabinoids.

*Anticipated Impact:* Qualifying conditions to get access to medical cannabis in Florida are common is both their chronicity and the lack of fully effective therapeutics to treat them. Thus, multiple medications are frequently prescribed concurrently (i.e. polypharmacy), and many of these agents will continue to be used concomitantly with medical cannabis. Such practices pose unknown risks for potential DDIs. Our research project aims to identify and mitigate the risks of DDIs involving medical cannabis in these complex patients.



### **Event-level changes in psychiatric and physical symptoms following medicinal cannabis use in older adults**

PI: Robert Dvorak, PhD  
University of Central Florida

*Project narrative:* Little is known about the immediate effects of medical cannabis use on clinical symptoms in real time. This study will examine the changes in both physical and mental health symptoms after medical cannabis use in older adults. Participants will use their mobile phones to report on symptoms throughout the day to determine the magnitude of changes in symptoms from pre- to post- medical cannabis use.

*Anticipated impact:* Results from the current study will provide guidance on symptoms that are, or are not, amenable to medical cannabis use, and help guide prescription recommendations for providers to reduce polypharmacy related issues.



### **Long-term molecular, metabolic, and behavioral consequences of perinatal exposure to cannabidiol (CBD) - A safety and efficacy study**

PI: Debra Fadool, PhD  
Florida State University

*Project narrative:* Individuals seek CBD during pregnancy to reduce stress, nausea, and anxiety but the impact of CBD on cognitive development and long-term health/mental health consequences is not known. We want to understand the effects of perinatally-administered CBD in mice in terms of offspring health, growth, and pup/dam interactions. We have designed experiments that will monitor long-term health consequences of fetal-exposed pups once raised to adults, that will measure glucose metabolism, energy homeostasis, and memory and attention behaviors, and whether modifications in gene expression are associated with long-term metabolic or psychiatric changes.

*Anticipated Impact:* Cannabis products cross placental membranes to enter fetal circulation, in fact, postpartum sampling of umbilical cords in women have indicated higher cannabis use than reported by survey - upwards to 22% for pregnant mothers in the USA. Our study will examine health outcomes of offspring exposed to CBD *in utero*, where we will examine how gestational exposure produces molecular changes in brain-region specific gene transcription that may increase obsessive-compulsive behavior and decrease long-term memory as adults.



### **Evaluation of immunomodulatory effects of chronic medicinal marijuana use and its routes of administration (smoking versus vaping) on the cerebral metabolism, morphology, dopamine (via neuromelanin MRI), and neural circuits of the whole-brain, and pain in young adults living with- and without-HIV**

PI: Varan Govind, PhD  
University of Miami

*Project narrative:* People living with HIV use medical or recreational marijuana for alleviating adverse effects of HIV infection and its medication such as neuropathic pain, anxiety, depression, and cognitive dysfunction among many others. Specifically, this proposal will evaluate effects of chronic marijuana use and its routes of administration on the brain, systemic inflammation, immune activation, neuropathic



pain, and behavioral measures in HIV-positive individuals.

*Anticipated Impact:* We anticipate that this study will provide preliminary data for assessing the impact of the form, dose and route of cannabis administration on the systemic inflammation and immune activation, brain metabolism and tissue structure, and interactions between the systemic and central nervous system (CNS) measures. This will form an important first step for designing cannabis-based systematic interventional studies to ameliorate specific conditions in HIV-positive individuals.



**A translational animal model to study neurobehavioral consequences of THC and oxycodone polysubstance use**

PI: Lori Knackstedt, PhD  
University of Florida

*Project narrative:* Our proposed research will use a rodent model of sequential oxycodone and cannabis intake to investigate the effects of opioid-cannabis polysubstance use on opioid-seeking, anxiety and the potential effects of the route of cannabis administration (inhaled smoke or ingested “edibles”) on these measures.

*Anticipated impact:* The ability of cannabis to influence opioid intake has not yet been assessed in either humans or animals, and thus the use of experimental models to do so will have the advantage of careful control of drug availability, route of administration and the timing of seeking and anxiety assessments. This work will potentially impact policy regarding the use of medical marijuana for the treatment of opioid use disorder, as is currently legal in several U.S. states.



**Randomized, controlled cross-over comparison of cannabidiol to oral opioid for postoperative photorefractive keratectomy pain control**

PI: Walter Steigleman, MD  
University of Florida

*Project narrative:* Photorefractive keratectomy (PRK) is a refractive eye surgery like LASIK with excellent outcomes and long-term stability. However, PRK involves longer healing and more pain than LASIK, often requiring treatment such as oral opioid medications to control. A substantial fraction of patients who develop addiction to opioid medications start with a legitimate prescription for postoperative pain. In this study, we will evaluate if an oral CBD product can offer similar pain relief to current standard therapy with an opioid medication.

*Anticipated Impact:* The impact of our study will inform the ophthalmology community about cannabidiol influence on postoperative PRK pain control. If we find similar efficacy, we should be able to reduce future opioid use for this surgery. This will be among this first reported studies evaluating CBD for eye/ocular pain.



## Effects of cannabidiol on resting state EEG and neuropathic pain severity in people with spinal cord injury

PI: Eva Widerstrom-Noga, PhD  
University of Miami

*Project narrative:* Although some individuals with spinal cord injury (SCI) who experience neuropathic pain report beneficial effects of marijuana, there is limited research regarding the analgesic impact of Cannabidiol (CBD) after SCI. Endocannabinoid receptors are common in areas of the brain that are involved in the pain experience and therefore it is likely that CBD modulates brain activity. However, the effect of CBD on neuropathic pain symptoms and its relationship with brain electrocortical activity in people with SCI is incompletely known. We will investigate the analgesic effects of a single CBD dose and associated brain changes using electroencephalography.

*Anticipated impact:* As far as we know, no studies have examined changes in neuropathic pain symptoms and resting state electrocortical activity following oral full-spectrum CBD oil administration. This study will provide important information regarding if a single CBD dose produces analgesic effects in those who experience neuropathic pain after their SCI and if these are associated with electrical changes in the brain. It will also serve as a basis for a larger, high-quality clinical trial to evaluate the effects of long-term CBD treatments in people who experience neuropathic pain after their SCI.

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## EVIDENCE AND RESEARCH ANNOUNCEMENTS

### High THC Levels found in oral and inhaled MMJ products in Florida's dispensaries

Analyzing details from online product listings via Florida dispensary websites, Ms. Arnold and a team of consortium researchers determined that the THC content of examined products is significantly higher than what has been investigated in clinical trials. Additionally, they discovered that THC:CBD ratios are highly skewed toward THC, products with high CBD content are scarce, and information regarding CBD content is often missing on the websites.

Carolin Arnold will present her poster "Accessing the THC and CBD content in oral and inhaled medical marijuana products in Florida's dispensaries" at the 12th IACM Conference on Cannabinoids in Medicine & 1st SSCM Conference on Cannabis in Medicine. The conference will take place October 20th and 21st at the Congress Centre in Basel, Switzerland.

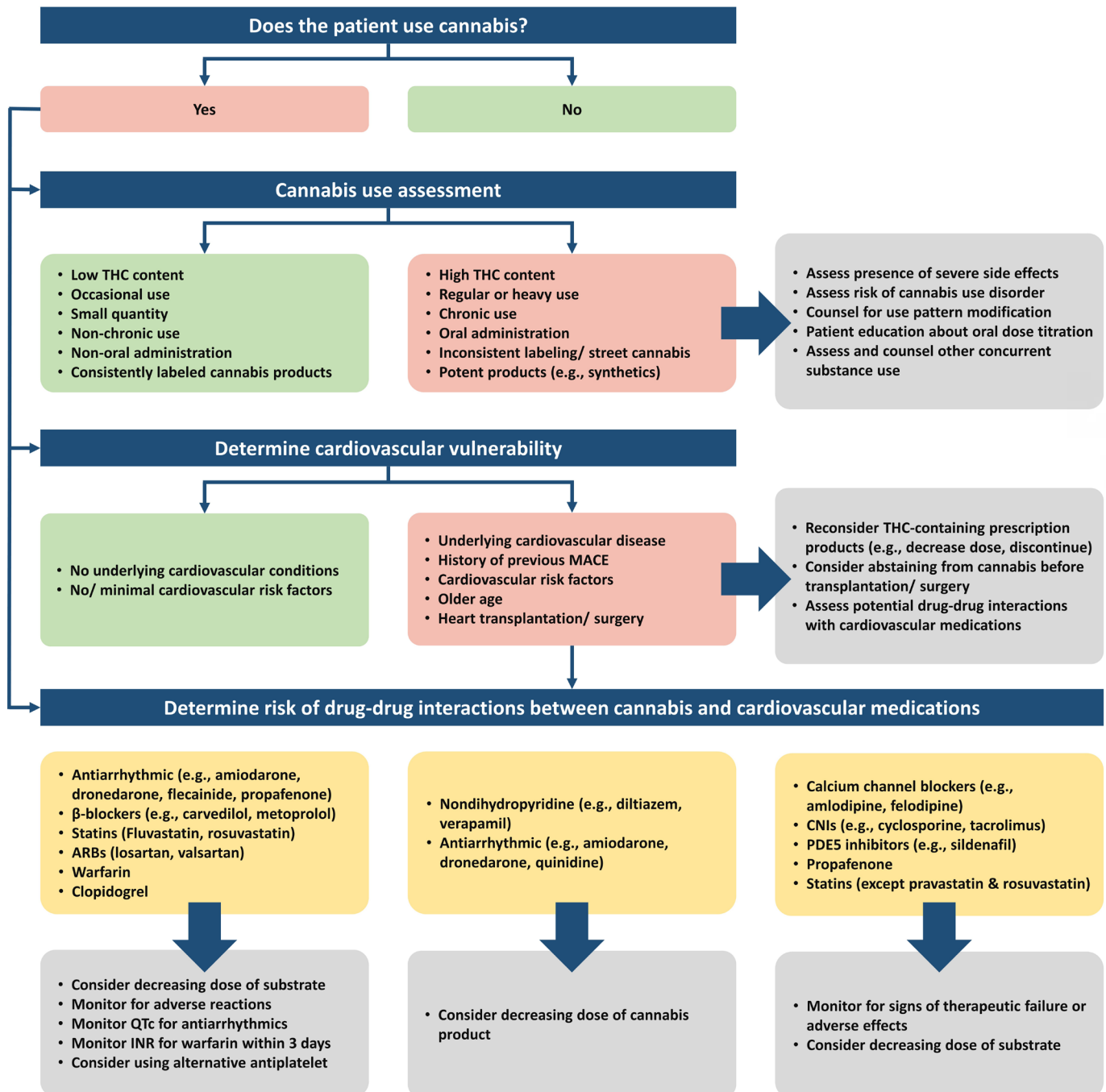
Learn more about the conference: [cannabismedicinalis.com](http://cannabismedicinalis.com)

## Evidence in Context: Cardiovascular Health and Cannabis Safety

Ruba Sajdeya, MD and members from the Consortium's clinical core, evidence, and MEMORY teams co-published a commentary in response to the American Heart Association's (AHA) statement related to cardiovascular health and cannabis safety. Titled *Clinical Considerations for Cannabis Use and Cardiovascular Health*, this commentary is part of the Consortium's *Evidence In Context* series published in *Medical Cannabis and Cannabinoids*, the official journal of the Consortium.

Presented in this piece is a potential assessment strategy for patients with potentially higher risk of cannabis-related cardiovascular adverse events and drug-drug interactions and suggested clinical interventions. See figure below:

Read the full article at [karger.com/Article/FullText/526731](https://www.karger.com/Article/FullText/526731)



# Medical Marijuana and Me (M<sup>3</sup>) Updates

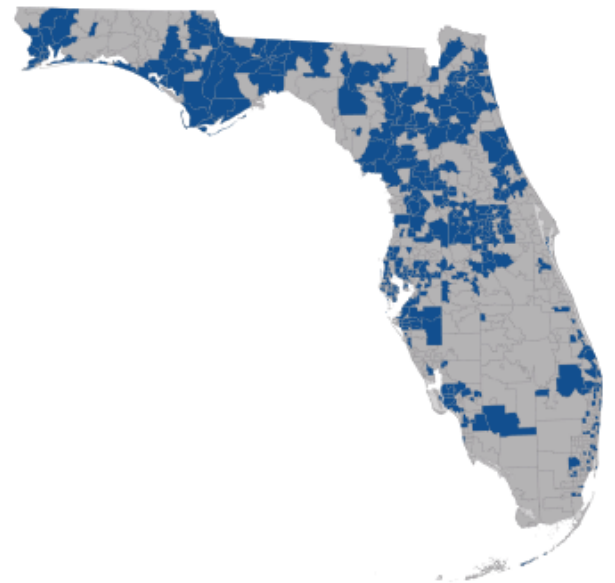
## Study Still Seeking New Patients for Enrollment

The Medical Marijuana & Me study is a longitudinal study of new and current medical marijuana patients in Florida. Since its launch in May, the study has enrolled 633 current medical marijuana patients and 174 new patients in Florida. Current patients completed a single, cross-sectional questionnaire while new patients completed the first of three questionnaires they will complete over 9 months. At the date of publication, 30 new patients have completed their 3 month follow-up survey.

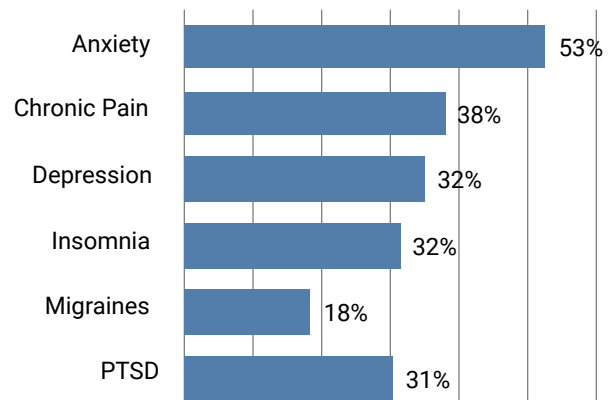
### M<sup>3</sup> Participant Demographics (as of 10/15/22)

|                        |                               |
|------------------------|-------------------------------|
|                        | <b>Total Enrolled:</b><br>807 |
| <b>Age, Mean (SD)</b>  | 46 (14)                       |
| <b>Sex at Birth</b>    |                               |
| Female                 | 61%                           |
| Male                   | 39%                           |
| <b>Ethnicity</b>       |                               |
| White                  | 82%                           |
| Black/African American | 9%                            |
| Other                  | 9%                            |
| Hispanic (% of Total)  | 15%                           |

### Map of M<sup>3</sup> Participants (as of 10/15/22)



Main reasons for MMJ use  
(note: 75% of respondents selected multiple reasons for using medical marijuana):





The M<sup>3</sup> team would like to thank the following clinics for their assistance in recruiting survey participants:

- Affordable Marijuana Licenses
- Dr. Bob's Compassion Clinic
- Dr. Melanie Bone, MD
- CannaMD
- Dr. Justin Davis, MD
- DocMJ
- Green Health & Wellness
- Releaf MD
- Releafe Now
- Spine & Wellness Centers of South Florida

**Interested in participating or learning more?**

Read about the study at [mmjoutcomes.org/JoinM3](http://mmjoutcomes.org/JoinM3)

**Are you a clinic or physician interested in supporting recruitment?**

Contact our study team at [m3cohort@php.ufl.edu](mailto:m3cohort@php.ufl.edu)

## Publishing Fee Waiver for Consortium–Member Institutions

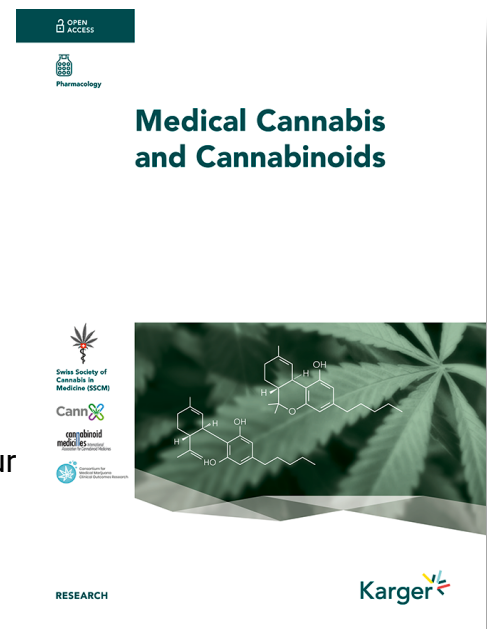
Consortium's Official Journal Offers 50% Off on Article Processing Charges for Accepted Papers from Member Institutions

Researchers at Consortium-member institutions are encouraged to submit articles for publication in *Medical Cannabis and Cannabinoids*, an open access journal indexed by PubMed Central and the official journal of the Consortium for Medical Marijuana Clinical Outcomes Research.

All corresponding authors from our nine member universities will receive an automatic 50% discount on article processing charges if accepted for publication in the journal.

To ensure your 50% ACP fee waiver, we recommend including in your submission cover letter that you are from one of the Consortium's member institutes.

For more information about the journal, visit [karger.com/mca](http://karger.com/mca)



# GET INVOLVED IN RESEARCH

CARMMA: Changing the way we collaborate across the state of Florida

The [Connect and Advance Research for Medical Marijuana Analysis \(CARMMA\) Database](#) is accessible to researchers, physicians, and industry collaborators.

We believe collaborations bring research advancements. The CARMMA Database connects researchers, clinicians, and industry to foster medical marijuana research.

Anyone interested in engaging in medical marijuana research is invited to register in CARMMA to find collaborators.

## JOIN THE CARMMA DATABASE



Have news or feedback to share?  
Let us know!

Share your Consortium-related research and news through our [submission form](#).

Share your comments on our newsletter through our [feedback form](#).

Don't want to miss any  
MEDICAMENT issues?

Share your contact information through our [newsletter sign-up form](#).

[Read previous MEDICAMENT issues on our website.](#)

