



Institute of Cannabis Research

COLORADO STATE UNIVERSITY-PUEBLO

Mission

The Institute of Cannabis Research (ICR) generates new knowledge of cannabis and its derivatives through research and education that improves lives and contributes to science, medicine, and society.

Objectives

- To conduct independent, objective, and unbiased research across multiple disciplines.
- To promote responsible development of cannabis-related natural and derived substances.
- To advance understanding of the scientific, legal, and socio-economic impacts of cannabis on society.
- To collaborate with the public and private sectors to address issues of public policy related to cannabis.

Contact

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History

The ICR was established in June 2016 through an innovative partnership between Colorado State University-Pueblo, the state of Colorado, and Pueblo County.

With \$900,000 in funding support from the state and \$270,000 from Pueblo County, the ICR is the nation's first multi-disciplinary cannabis research center at a regional, comprehensive institution. The primary function of the institute will be the generation of knowledge that contributes to science, medicine, and society through investigation of the benefits and risks associated with the use of cannabis. Research findings will be used to translate discoveries into innovative applications that improve lives.

CSU-Pueblo President Lesley Di Mare said the institute aligns with the university's mission as a provider of education, research, and service to the region. The research will be conducted in collaboration with three executive branch agencies: The Department of Public Health and Environment; the Division of Criminal Justice in the Department of Public Safety, and the Colorado Energy Office in the Governor's Office.

In its first year, the ICR is focused on the following goals:

- 1) to conduct pure and applied research across multiple disciplines with CSU-Pueblo faculty and students
- 2) to conduct a Pueblo County Cannabis Impact Study
- 3) to host the first, national, multidisciplinary research conference on cannabis, April 28-30, 2017, (see other side) and
- 4) to publish peer-reviewed conference proceedings and plan for the publication of a peer-reviewed, multi-disciplinary journal.

2017-2018 Goals

- Provide technical reports on the state and Pueblo County-funded research projects by December 2017.
- Host the first, national, multi-disciplinary, research conference on cannabis, April 28-30, 2017.
- Publish the first peer-reviewed, multi-disciplinary Journal of Cannabis Research.
- Develop an infrastructure for institute management, oversight, coordination, and programming.
- Identify private and government partnerships that will expand on current research, offer new research possibilities, and further develop ICR programming.
- Enhance laboratories, technology, and equipment to ensure continuation of research and logistical support.
- Ensure the future success of the institute through diverse and sustainable funding sources.

State and Pueblo County-Funded Research

- Effects of medicinal cannabinoids on seizures in adults with medically refractory epilepsy. This study will incorporate medicinal cannabis as an adjunctive treatment to analyze its impact on adults with epilepsy. Principal investigator Dr. Barbara Brett, Psychology.
- Investigation of the impact of industrial hemp fibers as viable replacements to wood when introduced into 3D printing filament composites. Principal investigator Dr. Neb Jaksic, Engineering; Co-principal investigator, Dr. Melvin Druelinger, Chemistry.
- Infrastructure development for cannabis growth and research at CSU-Pueblo. Includes greenhouse expansion, genome sequencing of 14 varieties of cannabis, the extraction and quantification of cannabinoids from hemp, and assessment of biological activity of compounds from cannabis as modulators of brain function in the limbic system receptors in mice. Principal investigator Dr. Brian Vanden Heuvel, Biology; Co-principal investigators, Dr. Jeff Smith, Biology, and Dr. Chad Kinney, Chemistry.

State-Funded Research

- Hemp seed and stalk extract supplementation effects on growth rate and metabolism of probiotics. Principal investigator Dr. Annette Gabaldon, Biology.
- Enhanced extraction method for cannabidiol (CBD) and other cannabinoids from cannabis leaves and flowers using pressurized liquid extraction. Principal investigator Dr. Chad Kinney, Chemistry.
- K-12 cannabis research pilot study analyzing existing data on marijuana use among minors; a survey of marijuana and drug education curricula; and a study of the effectiveness of specific marijuana and drug education curricula. Principal investigator Dr. Tim Peters, Teacher Education; Co-principal investigators Dr. Jenny Piazza, Dr. Sue Pettit, Dr. Margie Massey, Jeremiah Blaha, Teacher Education and Dr. Bethany Kies, Exercise Science and Health Promotion; and Evaluator/statistical specialist Dr. Jeff Piquette, Teacher Education.
- Investigating the role of endocannabinoid-induced metabolic changes on viral infection when applied to two specific viruses. Principal investigator Dr. Jordan Steel, Biology.
- Phytoremediation of municipal sewage sludge using industrial hemp to divert organic carbon-rich bio solids from landfills. Principal investigator Dr. Brian Vanden Heuvel, Biology.
- Analysis of the types of jobs being created in Pueblo County's cannabis industry including pay, hours of work, and job security. Principal investigator Dr. Brad Gilbreath, Business.

Pueblo County Impact Study

Social Impact: Dr. Tim McGettigan, Sociology, Dr. Joe Franta, Nursing

Economic Impact: Dr. Michael Wakefield, Dr. Aun Hassan, Hasan School of Business

Water and Power Usage: Dr. Jane Fraser, Dr. Leonardo Bedoya Valencia, Engineering

Optimal Buffer Zones related to Grow Sites: Dr. Brian Vanden Heuvel, Biology

Vision for the Future of the ICR

1. Prioritize the cannabis-related areas of research, consultation, and programming in which the ICR can have the greatest impact.

2. Ensure the future success of the institute by generating diverse and sustainable funding sources.

Develop a budget plan that includes long-term funding from state and local government along with private sector research and/or industry contracts.

Include intellectual property applications such as patents and licensing royalties.

3. Develop a quality research and programming infrastructure that includes CSU-Pueblo faculty and students and strives for local, state, national, and international impact.

Ensure excellent research laboratories, technology, equipment, and logistical support for cannabis research.

Build on 2017 CSU-Pueblo faculty cannabis studies and consider additional research strands that may include the humanities, sciences, technology, engineering, and math disciplines, as well as the cannabis industry development.

Ensure the management infrastructure continues to support outstanding research, programming, communication, and outreach.

Advance understanding of cannabis-related public policy and socio-economic issues by serving as a source of cannabis-related education and information.

4. Expand the scope and impact of the international ICR Research Conference.

Identify new programming and partnership opportunities for the annual research conference to expand its impact and relevance.

Secure academic, government, and industry sponsors and underwriters.

Maintain the distinguished keynote speaker for the Annual Mechoulam lecture.

Provide opportunities to highlight Pueblo and southern Colorado for business and tourism.

5. Publish the Journal of Cannabis Research twice yearly. Identify a distinguished editor and develop a distinguished editorial board of directors.

Develop the journal management.

Create a process for peer-review and selection of articles for publication.