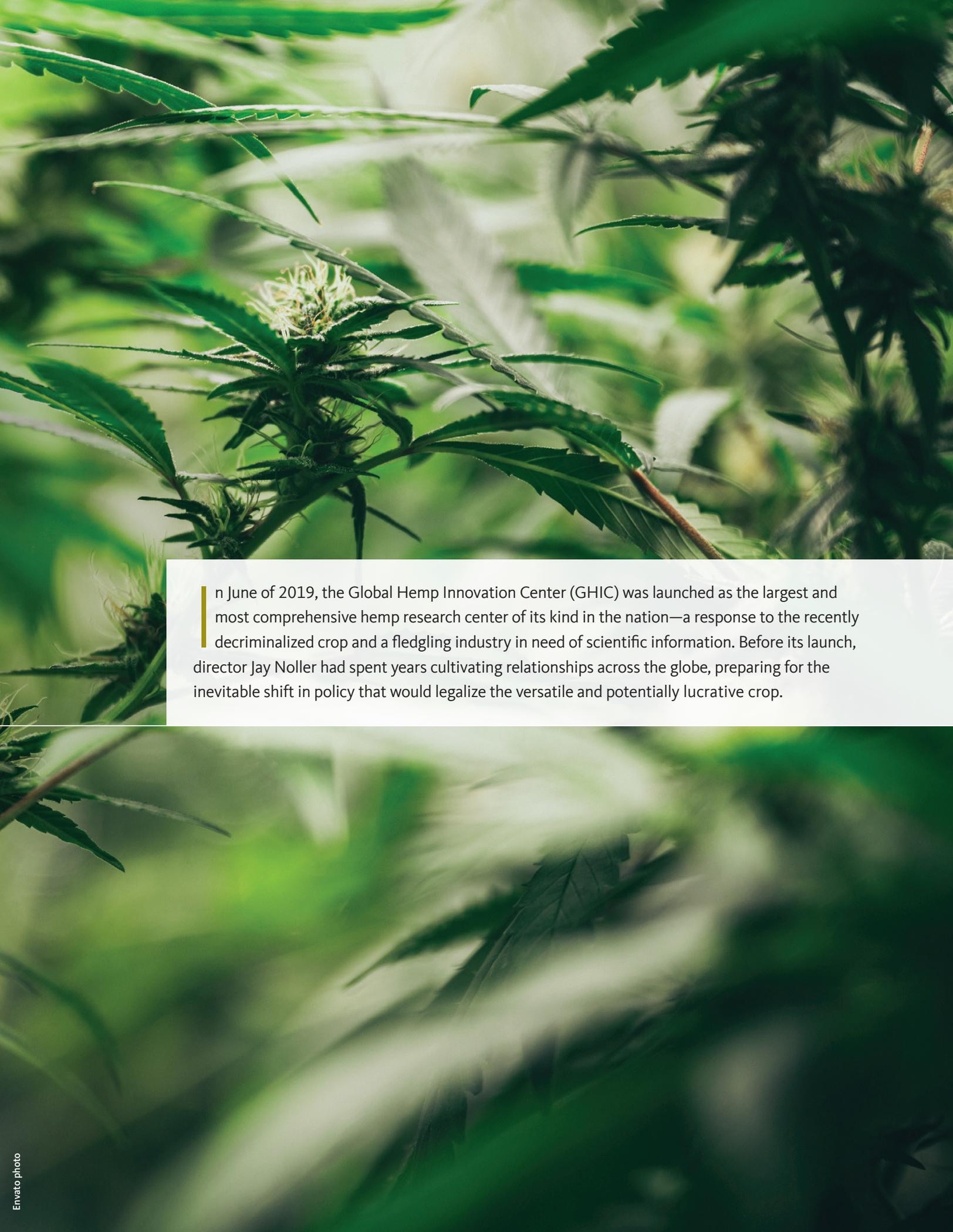




Honing in on HEMP:

A Year in Review

By Ben Davis



In June of 2019, the Global Hemp Innovation Center (GHIC) was launched as the largest and most comprehensive hemp research center of its kind in the nation—a response to the recently decriminalized crop and a fledgling industry in need of scientific information. Before its launch, director Jay Noller had spent years cultivating relationships across the globe, preparing for the inevitable shift in policy that would legalize the versatile and potentially lucrative crop.



Industrial hemp (*Cannabis sativa L.*) was grown as a commodity fiber crop in the United States from the mid-18th century until the mid-1930s. Hemp is a temperate region crop and grows best in northern latitudes from the 42nd parallel (Oregon's southern border) to 45th parallel (just north of Salem).

Stephen Ward photo

That policy change came in the 2018 Farm Bill, which removed hemp (not to be confused with its intoxicating sibling, marijuana, which has THC content above 0.3%) from the Controlled Substances Act and established a regulatory framework for hemp as a commodity. This piqued the interest of a wide range of industry sectors—from textiles and construction to food and pharmaceuticals—all looking for more sustainable bio-based material options for use in the manufacture of their products.

Since launching, the GHIC has been busy finding ways to help meet the many demands from diverse interests for products using hemp. Reviving a crop that missed out on the many scientific advancements of the 20th century is no simple task—especially with many recent societal and environmental factors that

have compounded the challenge.

The 2019 harvest yielded a surplus of hemp materials and products found throughout entire supply chains and many growers struggled to move inventory in an underdeveloped market. Then 2020 delivered a one-two punch of historic catastrophes: a pandemic and raging wildfires across Oregon. Through the lens of playing scientific catch-up, however, OSU researchers saw in these challenges an opportunity.

“Everything has slowed down. That gives us a chance to get the science ahead of the market, which will find information to help stabilize the industry for sustainable long-term growth,” said Jeff Steiner, associate director of the GHIC. “Growers, processors and companies will be able to use science-based information in their decision-making.”

In November 2020, the GHIC hosted the first annual Hemp Field Day (virtually), where staff gave updates about hemp research, and notably announced the formation of a wildfire effects working group. The Wildfire Smoke Effects on Hemp Stewardship Committee has gathered input from around the state to help determine the extent of concerns in the industry, and collected hemp samples for analysis. Staff have been taking cues from the wine industry, which has battled smoke effects for years, as they analyze samples for cannabinoids, heavy metals, and smoke compounds like methylphenols and diterpenoids.

Beyond addressing smoke effects, here's a glimpse at some of the GHIC's efforts and progress over the past year:

Hemp Variety & Water Use Trials

In addition to statewide hemp variety trials at experiment stations across Oregon, the GHIC has partnered with UC Davis on a comprehensive study of hemp water needs at five locations across Oregon and California. These efforts include testing how varying water applications to different types of hemp affects the quality and quantities of cannabinoids produced. Further, GHIC has also been coordinating a study with 14 land-grant universities to see how six industry varieties perform in various growing regions around the U.S.

Hemp Equity Program

The GHIC's Hemp Equity Program has partnered with a historically Black land-grant university and a Hispanic serving university to increase opportunities for collaboration with OSU through student and faculty partnerships. The GHIC is following through with its founding goal of devoting 10% of its discretionary resources to advance equity, inclusion, and diversity initiatives, which recognizes that systemic racism has historically restricted access to emergent agricultural business opportunities, such as those newly presented by hemp. This effort also includes networking and providing assistance through partnerships with hemp companies to serve BIPOC (Black, Indigenous, and People of Color) communities as well as opportunities for students.

Alabama native Le'Waski Watkins, an undergraduate in Horticulture and Crop and Soil Science at OSU, was drawn to GHIC and hemp from personal interest.

Above right: Large processing facilities extract oils from industrial hemp plants for use in a variety of products.

Right: Hemp seed and essential hemp oils both have shown early signs of promising health benefits which require further study.



Stephen Ward photo



Envato photo



Above: Le'Waski Watkins, who interned with GHIC and studies in the Horticulture and Crop & Soil Science department, is one of many first-generation college students struggling with the high costs of higher education. "College is expensive and I am paying for it alone. I really do not see myself finishing with the cost, but I just try to remain positive and work hard."

He chose to study hemp because he believed it played a role in literally saving his life—by helping him beat sarcoma in 2018. Le'Waski returned to his home this past summer through a GHIC-supported internship at the Winfred Thomas Research Station at Alabama A&M University, where he worked on the national essential oil hemp variety trials, as well as fiber and grain hemp varieties to see how they adapt to different climates. After returning to OSU for classes, he is now interning with the Forest Products Department to learn more about hemp as a component in building materials.

Watch a video of Le'Waski's internship experience at agsci.oregonstate.edu/faces-agsci

National Hemp Symposium

In February of 2021, OSU hosted the inaugural National Hemp Symposium with the National Academies of Sciences Board on Agriculture and Natural Resources (BANR), which drew hundreds of attendees to hear insights and developments from both industry leaders and policymakers about future visions for a hemp-based economy. The event also featured a film festival that screened four documentaries about hemp and its resurgence as a new-old crop commodity in the United States.

Learn more about the Global Hemp Innovation Center at agsci.oregonstate.edu/hemp 





HEMP HOMECOMING

From the 1880s to the 1930s, Oregon State University was the site of national research on hemp. As GHIC director Jay Noller puts it, “GHIC brought the epicenter of hemp research back home.”

GHIC INDUSTRY SECTOR RESEARCH CONSORTIA

- Agriculture Production
- Animal Health & Nutrition
- Business & Marketing
- Cannabis Lab: Standards & Certifications
- Digital Architecture & Construction
- Digital Hemp (Blockchain)
- Food & Beverages
- Pharmacy-Cosmetics & Dermatology
- Pharmacy-Medicine & Nutraceuticals
- Plant Breeding & Genetics
- Post-Harvest Extraction & Refinement
- Textiles

NATIONWIDE LAND-GRANT RESEARCH PARTNERS

- Montana State University
- West Virginia University
- University of Wisconsin
- Alabama A&M University
- Virginia State University
- Louisiana State University
- Oregon State University
- Virginia Tech University
- University of Kentucky
- University of Vermont
- University of Tennessee
- Cornell University
- University of California Davis
- Colorado State University Pueblo

GHIC EQUITY PARTNERS

- Colorado State University Pueblo
- Alabama A&M University
- Warm Springs Confederated Tribes
- Momma Hemp LLC
- Vote Hemp
- Phylos Bioscience
- Columbia Hemp Trading Company
- Willamette Valley Assured