

University of Miami and 1Print Join Forces to Commercialize SEAHIVE® Technology

The collaborative effort aims to bring SEAHIVE® technology to a global audience, with a focus on applications such as seawalls, breakwaters and artificial reefs

MIAMI, FLORIDA, UNITED STATES, March 21, 2024 /EINPresswire.com/ -- The University of Miami and [1Print](#) proudly announce a groundbreaking collaboration to advance the commercialization of [SEAHIVE®](#) technology, a hybrid approach to coastal resilience and marine habitat restoration. The agreement grants 1Print an exclusive license and sublicense to manufacture with advanced 3D concrete printers and distribute technology developed by the

University of Miami. The collaborative effort aims to bring SEAHIVE® technology to a global audience, with a focus on applications such as seawalls, breakwaters, and artificial reefs. The collaboration is one of the partnerships highlighted in South Florida's [ClimateReady Tech Hub](#),

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We are ready to scale the SEAHIVE® technology, our PrintCast™ 3D concrete printing processes, and the 3D printers and supplies that we are able to provide to partners regionally and internationally.”

Adam Friedman



A total of 25 SEAHIVE® units for marine habitat were efficiently deployed off the coast of Destin-Fort Walton Beach within a single day.

which was formed to drive regional technology and innovation-led growth by strengthening the capacity to manufacture, commercialize, and deploy key climate technologies.

1. Commercialization Agreement:

The University of Miami, holding rights to certain inventions related to SEAHIVE® technology, has entered into an agreement with 1Print to accelerate the development and marketing of this innovative solution. The collaboration will enable the commercialization of

SEAHIVE® technology on a worldwide scale by utilizing 1Print's PrintCast™ 3D concrete printing processes. This collaboration signifies a significant stride towards making SEAHIVE® technology widely available for engineering firms and governments worldwide.

Dr. Norma Kenyon, Vice Provost for Innovation at University of Miami says: "The University of Miami is excited about our collaboration, as this is the first licensed UM technology in the field of Blue Tech. Blue Tech represents the cutting-edge technology sector in the maritime industry, fostering sustainable innovation across emerging markets within the Blue Economy. This encompasses a diverse range of industries and innovative technologies dedicated to advancing sustainable ocean activities and business practices."

2. SEAHIVE® and 3D Printed Innovation:

University of Miami researchers have pioneered the development of SEAHIVE®, hexagonal-shaped, hollow structures designed to reduce wave energy and flooding, create marine habitats, and enhance coastal resilience. These units, 3D printed in honeycomb-like formations offshore, are a fusion of natural and manmade elements.

Landolf Rhode-Barbarigos, an associate professor in University of Miami Department of Civil and Architectural Engineering and one of the inventors, emphasizes the dual purpose of SEAHIVE®, dissipating wave energy to minimize coastal flooding and erosion, and providing a conducive environment for marine life such as corals, mangroves, seagrass, and oysters.

Fredrik Wannius, co-founder of 1Print, affirms the company's commitment to commercializing SEAHIVE® technology with 3D printing for applications such as seawalls, breakwaters, and



1Print, a team of high-tech problem solvers, is known for its engineering and design-focused approach. 1Print specializes in creating green-gray infrastructure products that provide the resilience and sustainability required to address complex challenges.



SEAHIVE® Systems are for protecting critical assets and coastal communities while creating habitat.

artificial reefs. The collaboration has received a \$1.9-million grant from the U.S. Army's Small Business Innovation Research Program, reinforcing the potential impact of this innovative coastal solution using sustainable materials.

3. First Joint Project in Okaloosa County, Florida:

In a historic endeavor, 1Print, in collaboration with the Okaloosa Coastal Resource Team, has deployed the first 3D printed artificial reefs off the Destin-Fort Walton Beach coast. This project, funded by the Florida Fish and Wildlife Conservation Commission, marks a significant milestone for marine habitat creation.

Alex Fogg, Coastal Resource Manager, underscores the importance of environmental projects like artificial reefs, stating they provide recreational opportunities while benefiting the ecosystem. The collaboration between 1Print and Walter Marine resulted in the successful deployment of 25 concrete modules, establishing new marine habitat at depths ranging from 60 to 90 feet.

Adam Friedman, co-founder of 1Print, expresses confidence in scaling up production for future projects, emphasizing the durability and efficiency of 3D printed reefs in marine environments. "The project in Okaloosa County serves as the proof of concept on a larger scale, further validating the potential of SEAHIVE® technology as a solution for protecting national security infrastructure and coastal communities across the United States, while creating habitat. We are ready to scale the SEAHIVE® technology, our PrintCast™ 3D concrete printing processes, and the 3D printers and supplies that we are able to provide to partners regionally and internationally."

4. South Florida's ClimateReady Tech Hub:

The U.S. Economic Development Administration (EDA) Tech Hubs program was established under the CHIPS and Science Act of 2022 and aims to strengthen U.S. economic and national security by making investments in regions across the country that are poised to become globally competitive in the technologies and industries of the future. Each Tech Hub is built around a consortium of business, government, higher education, workforce, labor, and community organizations. The ClimateReady Tech Hub has applied for Phase II implementation funding from the EDA to unlock up to \$70M for the region.

Led by Miami-Dade County, the ClimateReady Tech Hub was designated as a technology hub by the Department of Commerce's Economic Development Administration (EDA) in October 2023. ClimateReady Tech Hub works with public, private, academic, and philanthropic partners to commercialize and deploy climate technology. It focuses on scaling climate resilient infrastructure built in South Florida. This includes both adaptation and mitigation products to withstand extreme weather events, increased flooding and wind, and increased heat.

Francesca de Quesada Covey, Regional Innovation Officer for Miami-Dade County and Chair of

the Steering Committee for the ClimateReady Tech Hub, expresses satisfaction with the collaboration between the University of Miami and 1Print: "This partnership signifies a notable advancement in our endeavors toward sustainable climate technologies. Together, we are effectively transforming hope into measurable outcomes, underscoring the power of collective action and innovation in shaping a more sustainable and equitable future."

SEAHIVE® technology is poised to make waves by breaking waves, addressing the challenges of coastal resilience and environmental conservation on a global scale.

1Print:

1Print, founded by Francis Greenburger, Adam Friedman, and Fredrik Wannius, is a new type of infrastructure company that offers advanced 3D concrete printing, creating complex shapes that can be rapidly deployed at scale and on the customer site. Initially, 1Print is designing and producing green-gray coastal protection solutions, including artificial reefs and seawalls, to mitigate the damage caused by extreme weather events in coastal and inland communities. The products are ideal for preserving shorelines, restoring land and water infrastructure, and advancing the built environment. 1Print also offers resilient and sustainable housing and commercial buildings.

Fredrik Wannius

1Print LLC

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