
Moonlighter Makerspace 2041 NW 1 Place Miami, Fl. 33127 | (305) 699-2041 | info@moonlighter.co

Letter of Intent - Overview Summary

Moonlighter Makerspace Miami Beach would become the South Florida hub for Advanced Manufacturing - positioning the city to become the epicenter for innovative solutions to the region's exponential social, economic, and climatic changes. The fablab can be used to advance research and prototypes for civic initiatives and support local arts programs.

Possible synergies with other educational, cultural, and government institutions include:

- Miami Beach Urban Studios - FIU
- Bass Museum
- Wolfsonian Museum - FIU
- New World Symphony
- Miami New Drama
- City of Miami Beach Government Sea Level Rise Initiatives
- City of Miami Beach Cultural Arts Council
- Artechouse Gallery
- ArtCenter South Florida
- Code for Miami Workshops + Hackathons

While Moonlighter currently operates as a social venture (S-corp.), the corporation is in the process of incorporating and filing for 501(c)3 status, expected to be completed in February 2019. The listed community benefits below are offered in exchange for a subsidized rent of \$1/year at the City owned property: 7,722sqft. at 1661 Pennsylvania Avenue Miami Beach, Fl. Moonlighter seeks to lease for a term of 3 years, with options to renew the terms 2 years at a time, in order to work on long term initiatives that build a robust advanced manufacturing and innovation ecosystem in The City of Miami Beach. The agreement shall stipulate that the lease can extend to up to 10 years after the initial 3 years, at other City owned properties.

Moonlighter Makerspace will relocate to the Miami Beach location, bringing over a quarter million dollars worth of technology, equipment and tools, as well as the maker communities, networks, and research initiatives it is currently involved in and fostering. We will coordinate featuring the innovation work in the City of Miami Beach at the annual regional Maker Faire and other national/international Maker conferences. Other possible partnership initiatives include:

- Precious Plastics Initiative
 - Beach plastics pickup and recycling
 - In-house plastics lab teaches the community to make new objects with the recycled plastic. More info: <https://preciousplastic.com>
- FabCity Global Initiative Designation
 - Work with city to develop policy and infrastructures for becoming a self-sufficient city - joining 28 cities across the globe.
 - Initiatives support resiliency efforts and position Miami Beach as a leader in sustainability. More info: <https://fab.city>

Moonlighter Miami Beach

Mission

Empowering the community with the opportunity to build ideas and shape their future through a shared learning and working environment that provides access to digital tools, advanced manufacturing, and innovative, hands-on educational experiences.

Objectives

1. Educate a new generation of innovators with digital and technical skills.
2. Provide an environment for shared working and learning that accelerates innovation and collaboration.
3. Provide access to a wide range of advanced manufacturing tools and equipment.
4. Create opportunities to bridge civic and social challenges to the community of talent that can help build solutions.

Overview

Moonlighter Makerspace is a social venture that brings a S.T.E.A.M. education center, co-working space, and digital fabrication lab together in the same space. This encourages creative collaboration and innovation to occur organically - where members are constantly learning, making, and sharing ideas. By empowering the community with the technical skills they need and giving them affordable access to advanced manufacturing technologies, we prepare citizens for exponential and changing economies, and we close the digital divide by leveling the playing field and giving everyone an opportunity to harness the means of shaping their futures and the environments where they live, work, and play.

- Registered MIT/Fab Foundation Fabrication lab. One of 1600 worldwide connected to global research initiatives and shared resources.
- Member, Urban Manufacturing Alliance and Nation of Makers Organizations.
- Partner, Fairchild Tropical Botanic Garden and NASA - Education and research initiative to develop efficient technologies for growing plants in the International Space Station.

Public Benefits

STEAM Education

Supporting Science, Technology, Engineering, Arts, and Mathematics education to students throughout Miami Beach.

- 1 Free field trip each year for up to 35 students from each public school in Miami Beach:
 - North Beach Elementary
 - South Pointe Elementary
 - Biscayne Elementary
 - Treasure Island Elementary
 - Fienberg/Fisher K-8 Center
 - Nautilus Middle
 - Miami Beach Senior High
 - Approx. Value \$18,000 Over 3 Years
- 20% off any additional field trips for each public school in Miami Beach.
 - Approx. Value of up to \$102,000 Over 3 Years
- 10% off after school programming to all Miami Beach students.
 - Approx. \$15 off per session package per child.
- Free Bi-Annual Professional Development Workshops for Miami Beach teachers and Rec Staff.
 - 50 Participants Per Session / 100 Per Year / 300 Total over 3 Yrs
 - Approx. value up to \$75,000
- Annual Internships for School Credit for MB High School Students. 5 Students in Spring and 5 Students in Fall semester each year. Internship provides Advanced Manufacturing STEAM Basics Certification.
- Tour of Makerspace and introduction to The Fairchild/NASA national design challenge for all IT Academy Students in Miami Beach High.
- Partner with Miami Beach Chamber of Commerce to provide free use of space for business development workshops or economic development events bi-annually.
- Contingent upon success of fund-raising efforts:
 - Scholarships for 50 needs-based students to attend Summer STEAM Camps at Moonlighter (Approx. \$15,000 needed)
 - Scholarships for after-school sessions for low income/needs-based Fienberg/Fisher + Biscayne Elementary students with transportation included from the school.
 - Paid Summer internship programs for MB High School Students.
 - On-Site STEAM programs at Miami Beach Schools subject to availability of necessary on-site equipment.

Urban Placemaking / Arts Activations

10% off design and fabrication services for civic/arts installations. Partnering with local Miami Beach institutions to activate public spaces and/or support arts initiatives with the digital fabrication lab. Work with local artists to nurture emerging talent.

Artisans and Innovators in Residence

A residency program that supports creatives with the resources they need to build their innovative concepts. 1 free studio space per quarter for a selected person or team based on project proposal submission. (4 Innovators per Year, 12 total over 3 Years) Residencies that wish to continue their work after receive a free year of basic membership to the fabrication lab.

Community Workshops

Our workshop teach the basic and safety use of various advanced manufacturing equipment, hand tools, and design software available in the lab. All Miami Beach residents will have an exclusive discount (with Photo ID confirming MB residence) to all community workshops.

- 10% off all-ages maker workshops for Miami Beach residents.
 - Average savings of \$500 per year per maker.

Moonlighter Memberships

Memberships are a low-cost solution for people interested in learning how to use digital fabrication techniques and tools to build their ideas. Starting at just \$35, it provides a low barrier to entry for new ideas to be tested before committing to more expensive manufacturing methods.

Community Benefit Venue Waiver

Exhibition space can be granted to cultural and educational organizations for exhibitions, fundraisers, workshops, and events that support the advancement of the mission.

Fourth Industrial Revolution Lecture Series

A lecture series bringing in experts in the fields of Internet of Things, Machine Learning, Artificial Intelligence, Robotics, Automation, Autonomous, Alternative Energies, Advanced Manufacturing and Construction, Maker Education, and other relevant topics to advance workforce development in the region, preparing the city for industry 4.0.

Contextual Information:

The Importance of The Maker Movement

Maker culture is a contemporary culture or subculture representing a technology-based extension of DIY culture that revels in the creation of new devices as well as tinkering with existing ones. The maker culture in general supports open-source hardware and software. Typical interests enjoyed by the maker culture include engineering-oriented pursuits such as electronics, robotics, 3-D printing, and the use of Computer Numerically Controlled tools, as well as more traditional activities such as metalworking, woodworking, and, mainly, its predecessor, the traditional arts and crafts. There is a strong focus on using and learning practical skills and applying them to solve problems.

Maker culture emphasizes learning-through-doing ([active learning](#)) in a social environment. It emphasizes informal, networked, peer-led, and shared learning motivated by fun and self-fulfillment. Maker culture encourages novel applications of technologies as well as the exploration of intersections between traditionally separate domains and ways of working including metal-working, calligraphy, film making, and computer programming. Community interaction and knowledge sharing are often mediated through networked technologies, with websites and social media tools forming the basis of knowledge repositories along with a central channel for information sharing and exchange of ideas, and focused through social meetings in shared spaces such as makerspaces. Maker culture has attracted the interest of educators concerned about students' disengagement from STEAM subjects (science, technology, engineering, arts and mathematics) in formal educational settings. Maker culture is seen as having the potential to contribute to a more participatory approach and create new pathways into topics that will make them more alive and relevant to learners.

Some say that the maker movement is a reaction to the de-valuing of physical exploration and the growing sense of disconnection with the physical world in modern cities. Many products produced by maker communities have a focus on [health](#) (food), [sustainable development](#), [environmentalism](#) and local [culture](#), and can from that point of view also be seen as a negative response to [disposables](#), [globalised mass production](#), the power of [chain stores](#), [multinationals](#) and [consumerism](#).

In reaction to the rise of maker culture, [Barack Obama](#) pledged to open several national [research and development](#) facilities to the public. In addition, the U.S. federal government renamed one of their national centers "[America Makes](#)".

The maker movement is a social movement with an [artisanal](#) spirit in which the methods of [digital fabrication](#)—previously the exclusive domain of institutions—have become accessible at a personal scale, following a logical and economic progression similar to the transition from minicomputers to personal computers in the [microcomputer revolution](#) of the 1970s. In 2005,

Dale Dougherty launched [Make](#) magazine to serve the growing community, followed by the 2006 launch of [Maker Faire](#). The term, coined by Dougherty, grew into a full-fledged industry based on the growing number of DIYers who want to build something rather than buy it.

The rise of the maker culture is closely associated with the rise of hackerspaces, Fab Labs and other makerspaces, of which there are now many around the world. These spaces allow like-minded individuals to share ideas, tools, and skill sets. In addition, those who identify with the subculture can be found at more traditional universities with a technical orientation, such as [MIT](#) and [Carnegie Mellon](#) (specifically around "[shop](#)" areas like the MIT Center for Bits and Atoms, MediaLab and the CMU Robotics Club). As maker culture becomes more popular, makerspaces and Fab Labs are becoming more common in communities, universities and public libraries. The federal government has started adopting the concept of fully open makerspaces within its agencies, the first of which (SpaceShop Rapid Prototyping Lab) resides at [NASA Ames Research Center](#). In Europe the popularity of the labs is more prominent than in the US: about three times more labs exist there.

With the rise of cities, which is estimated to host 60% of mankind by 2030, hackerspaces, fablabs and makerspaces will likely gain traction, as they are places for local entrepreneurs to gather and collaborate, providing local solutions to environmental, social or economical issues. Though desktop machines and inexpensive tools for the home have made many projects possible, some still require industrial equipment that's not accessible to the typical maker. Makerspaces tend to be a community-based industrial space that operate on a membership plan, somewhat like a gym. Moonlighter is one of these spaces.

What is S.T.E.A.M?

STEAM is an educational approach to learning that uses **Science, Technology, Engineering, the Arts and Mathematics** as access points for guiding student inquiry, dialogue, and critical thinking. The end results are students who take thoughtful risks, engage in experiential learning, persist in problem-solving, embrace collaboration, and work through the creative process. These are the innovators, educators, leaders, and learners of the 21st century!

The US Department of Education reports that the number of STEM/STEAM jobs in the United States will grow by 14% from 2010 to 2020, growth that the BLS terms as “much faster” than the national average of 5-8 % across all job sectors.

Computer programming and IT jobs top the list of the the hardest to fill jobs, according to a recent study done by McKinsey. Despite this, the most popular college majors are not STEAM related.

“The number of graduates in the STEM fields is growing. Only .8% annually” according to the same Mckinsey study. So how can we get more kids involved in STEM, and create a strong and able workforce? By teaching STEAM, of course.

The inclusion of the arts component into STEM makes it more fun to learn, and approachable for children to learn. A child who has never seen code or computer science learning will be less intimidated and more engaged if it includes something they are familiar with, like an art component, whether that is learning it on an interface that uses a creative component to teach it, or whether they are learning computer science by actually creating something.

Children need to be engaged in learning through ways that can hold their attention, the way social media and internet sites like Youtube do. The easiest way to do this is to make it fun and interesting. The inclusion of arts does this, for a wider range of children. Something like video art tied into code makes learning look more fun, where the student is solving a problem to create a project they love.

Art education allows students to learn things in a more open ended way and make them applicable to real life. Arts and creativity are crucial to the sciences, technology, and computer science. They are the tool that allows technology to be usable in real life! Arts are used in website and user interfaces design, advertising, product design and usability, branding, and start-up creation among countless other uses. All things that are crucial to STEM learning and careers.

STEAM education is crucial to educate and prepare the next generation of the American and global workforce. It will allow this generation to create jobs and grow the economy in ways that are more sustainable and equitable than ever before.

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Reference Images for Lab:

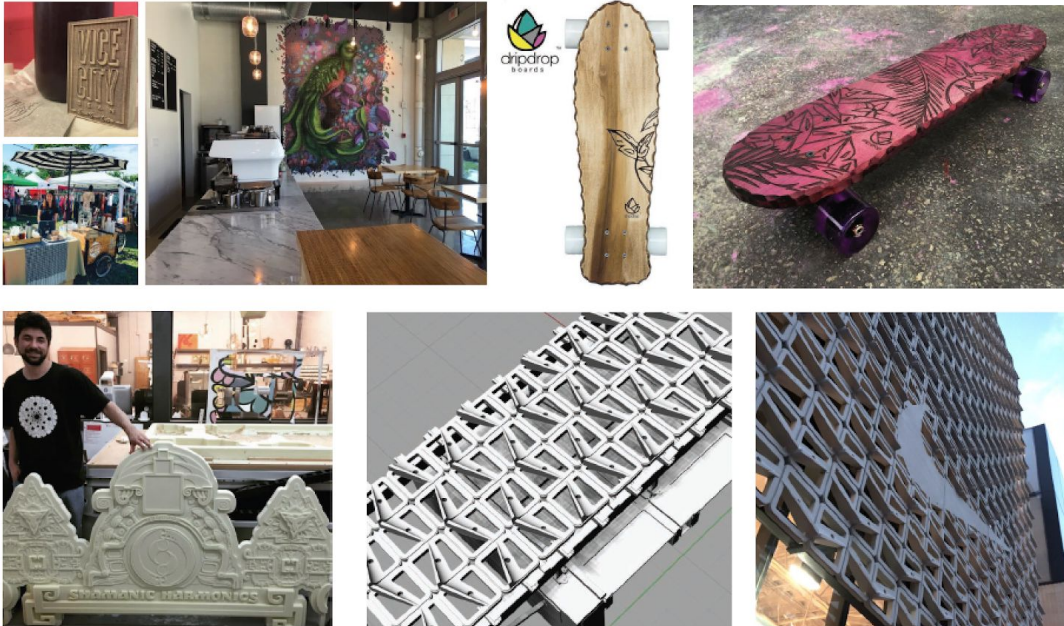




Moonlighter History/Overview:

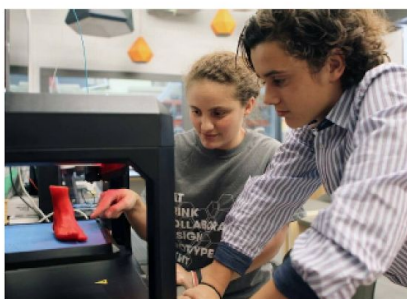
A Diverse Maker Community

- Vice City Bean | Small Business
- Drip Drop Boards | Product Start-Up
- Shamanic Harmonics | Artist
- Touzet Studio | Architecture Firm



Member Stories

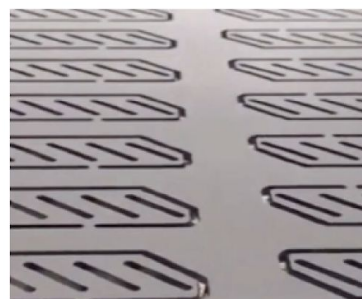
"What incubators and co-working spaces have done for the tech industry, maker spaces will do for the hardware, manufacturing, and fabrication design industries."



Digifeet:

A technology startup that creates truly custom orthotics by 3d scanning patients' feet, sending digital files to doctors for review, and 3D printing flexible orthotic solutions to solve various foot problems.

- 16 Year old founder
- Winner of Miami Herald Business Plan Challenge
- Founded Moonshot Makers at School for Advanced Studies
- Winner of 2017 Silver Knights Award



Watsco Ventures:

Weekly users of Watsco's e-commerce apps grew by 220 percent last year, while online transactions grew by 127 percent. Line items per order grew 28 percent when the apps were used.

More than 1,500 internal users are now using its Business Intelligence platform, up 12 percent, and the average number of BI queries per day increased 31 percent per user.

Because of warehousing efficiencies, the company reduced its needs by 500,000 square feet in 2016. The company made dramatic improvements in inventory turnover at locations that have fully adopted the technologies.



SOP Technologies:

An environmental startup that provides technologies to prevent ocean pollution, prevent floods, and provide cost savings to communities.

- Awarded Key to the City 2017
- Awarded 2017 American Entrepreneurship Award
- Working with local and national municipalities to implement cost effective stormwater filtration devices and smart sensors for mitigating ocean pollution.

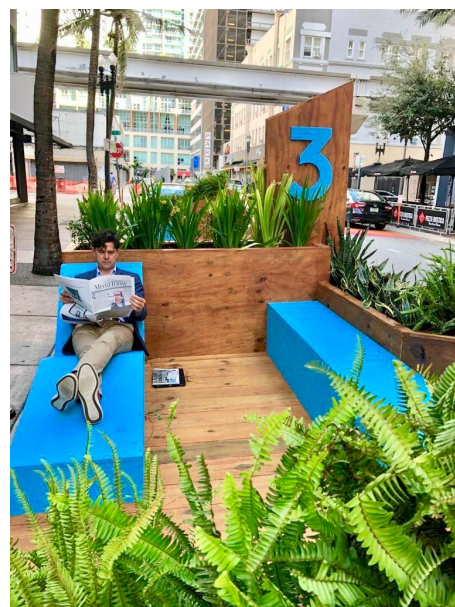
and many more...

Social Impact Projects

- Biscayne Green Pop-Up Park
- Maker Faire Miami Pavilion
- Urban Hacking: SmartBites Vertical Farms
- Mobile Reading Pod: Miami Book Fair



Miami Baywalk Activation in Partnership with DDA | Avenue 3 Miami Parklet / MDT Quick Build



Education of the 21st Century

- Unique STEAM Curriculum
- Internship Programs + University Partnerships
- Entrepreneurship, Electronics, Design Thinking
- Field Trips, Afterschool, Camps, & More!

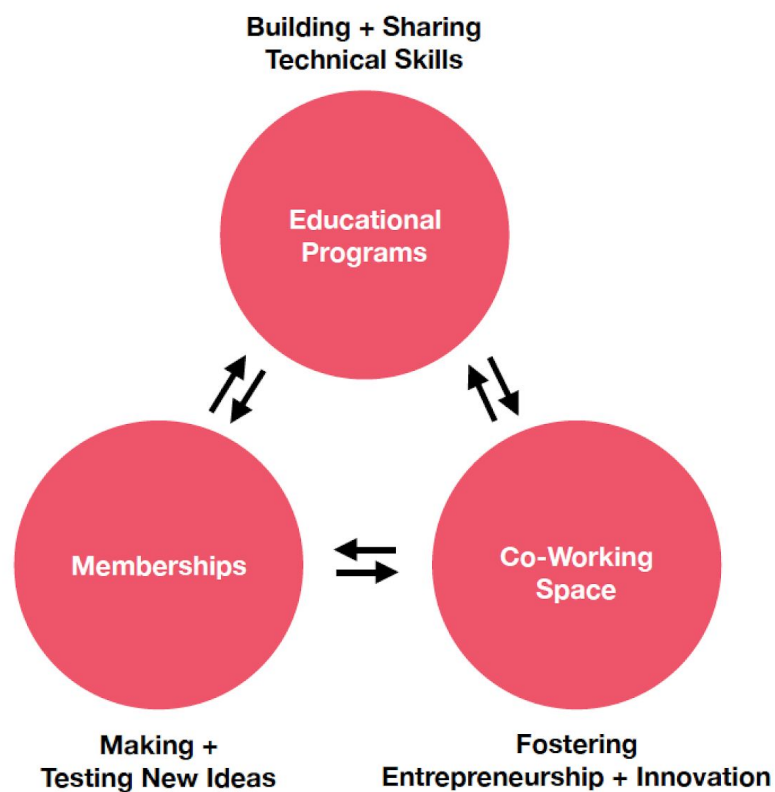
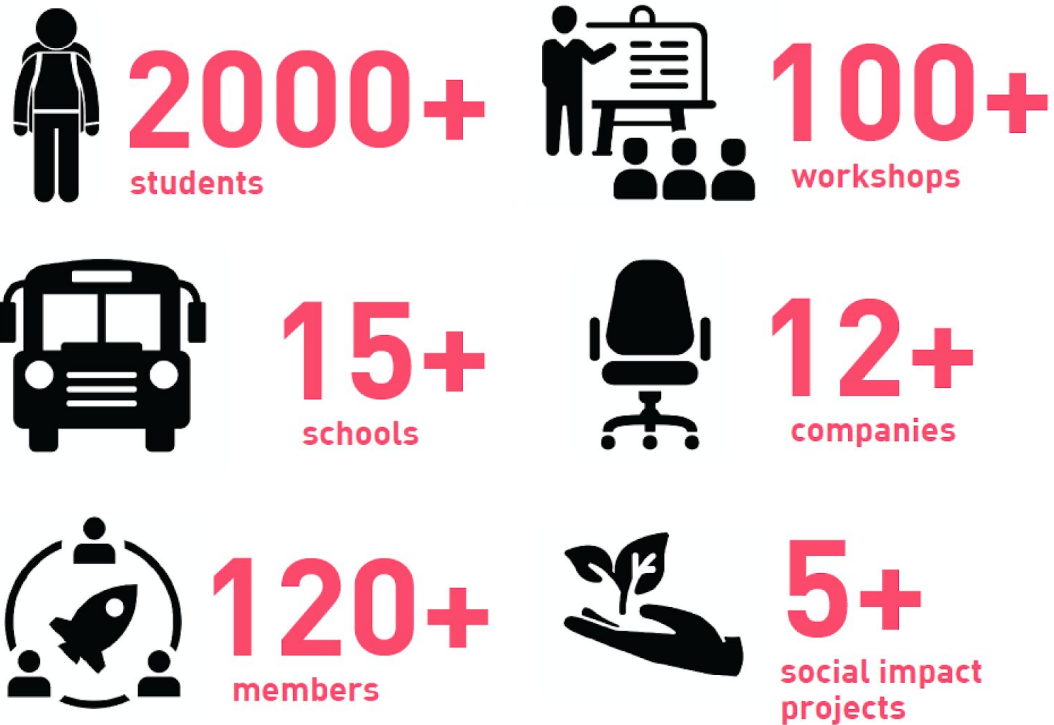


Events, Meetups & Conferences

- Maker Faire Global Summit
- IE School of Business Global Immersion
- Nation of Makers Summit at White House
- Solidworks Industry Meetups, + More!



Stats + Structure



Networks + Partnerships

