

PROPOSAL

To Fund Pittsburgh's First Community  
Maker Space Site-Expansion

# HackPGH

*Give ordinary people the right tools, and they will design and build  
the most extraordinary things.* — MIT MediaLab



Above: Founder of Black Tech Nation and advocate for diversity of opportunity in technology, Kelauni Cook speaks to HackPGH members about Bitcoin/blockchain technology.

Below: Students and HackPGH members making smog detecting balloons in their Uptown headquarters at 5thAVE STUDIO



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## BACKGROUND

# Makers

**The Maker Movement, as an avenue to spur interest in manufacturing, or to fulfill the need for an alternate career path, or to ignite creative entrepreneurship (think Etsy online), has big National media attention right now.**

**Some have called it a *Third Industrial Revolution*.**

Eleven-years ago the notion of a “maker” or maker-space had barely surfaced. Since then the Brookings Institute has written about it, also WIRED magazine, MAKE magazine (the bible of the movement), TIME magazine, and locally, Bridgeway Capital and Deloitte have dissected it (Report: *Pittsburgh Maker City Initiative*) – plus numerous others. Some are spurred by the original FabLab that grew out from MIT in 2001 into a collaborative global community of learners, educators, technologists, researchers, makers, and innovators, in over 1,200 locations that span 30 countries and 24 time zones.

**However, this is a simpler story – and a local story...**

... about the work that gets done on a daily basis from Pittsburgh’s first Maker Space – born from 21-year old entrepreneur Nick Pinkston from the University of Pittsburgh, *now CEO of Plethora, and a 2016 Forbes “30 Under 30;”* and Matt Stultz, *now Digital Fabrication Editor for MAKE magazine.*

The garage/shop is on the ground floor of a 13,000 sf site in Uptown that was to become StartUptown (now called 5thAVE Studio), which 11 years ago was Pittsburgh’s first entrepreneurial co-working space. It was situated in the Central Pittsburgh Keystone Innovation Zone (PCKIZ) initiated by Duquesne University and run by what was to become Urban Innovation 21.

Nick and Matt’s shared goal was to have a community-run space to share knowledge, lower the cost barrier to entry for access to digital tooling and learning new skills, and to support a community of like-minded people who have a passion for making.

**HackPGH celebrated nine years of community *service* in March 2018.**

## THE PITCH FOR FUNDING

# Open Letter

HackPGH — a 501c3 nonprofit of 100+ members

*Promoting maker-spaces and "making" as an avenue to support regional employee growth for jobs in new manufacturing — or simply as a means to expose alternate career paths, just makes good sense.*

HackPGH had outgrown its 1,560 sf — the larger, improved space of 3,600 sf, will not only provide a home for new makers and ideas, but invigorate the neighborhood — with a bigger classroom/meetup space, ADA and City code compliance, increased shop space, and HVAC to keep the organization running at peak efficiency. More of the public will be able to participate, all in the heart of the community where Uptown Partners can also host a full community meeting.

*With access to the rough pre-developed space in early 2018, and the closing of the TechShop in September of 2017, HackPGH's membership has grown from 50 to 100+ members.*

Like the romantic vision of a *startup beginning business in a garage*, HackPGH has done the same — the amount of good work they've accomplished is greater than the existing physical space suggests!

This energetic group with the leadership of Chad Elish, is ready to expand from "garage" to maker *facility*. Maker Spaces want to be in every community, committed to drawing membership from both within and outside the community. They want to be connected to community leadership and be engaged with community projects — HackPGH, at StartUptown/now 5thAVE Studio, has done community outreach better than any other maker group. *The Public Art + Civic Design Division, and the Strategic Planning Division of City Planning* recently announced the selection of ProjectCONNECT, proposed by the collective HackPGH with MetaMesh Wireless Communities and Artist Chiaka Zule Howze for a public playground art/technology grant in Uptown of \$25,000.

**Following is a 2-page open letter to ask for your support, followed by 5-stories that support the range of engagement by this extraordinary organization, and its impact on the greater Pittsburgh community.**



“Manufacturing has an \$84 billion impact on Pennsylvania’s economy, and employs more than 500,000 who earn an average annual wage of more than \$59,000. This talented workforce provides a unique advantage for the manufacturing industry in SWPA. Our Making Your Future campaign aims to seek the “makers” in the Pittsburgh region and connect them with manufacturing companies to encourage workforce development.”

— Petra Mitchell, President and CEO of Catalyst Connection — PA’s regional Industrial Resource Center

## The Pitch for Funding — An open letter

### HackPGH: Community Maker Space Expansion

Our ASK is for the expansion and renovation of the ground floor at 1936 Fifth Avenue for HackPGH, a Federal 501c3 nonprofit Maker Space in Pittsburgh’s Uptown/Hill District. For nearly a decade this community-focused maker organization has fostered both STEM education and creative thinking in one of the city’s under-served neighborhoods. HackPGH membership provides low-cost tools, technologies, and classroom experiences that foster innovation, AI/robotics, design efficiency, prototyping, and fabrication — all integral to the Maker Movement and to our regional economic development. It’s located in the city-designated Uptown-West Oakland Ecoinnovation District — a \$1.6M planning and implementation endeavor that supports a new model of public-private partnership that emphasizes innovation and deployment of district-scale best practices to create neighborhoods of the future — places that are resilient, vibrant, resource efficient and just.

President Chad Elish says, *“HackPGH has been self sustaining for nearly a decade. Our goal has been to not rely on funding to keep the doors open, but to use grants to provide a larger impact for the community — having a larger, enhanced learning environment, will increase our impact.”*

The members of HackPGH use their skills to improve both their own lives, those of their neighbors, and local and national communities — as exemplified by MetaMesh Wireless Communities, born within the walls of HackPGH — Adam Longwill, ED, and new HackPGH boardmember says:

**“The tools and technologies that HackPGH provided, allowed us to develop into the successful charity we are today — Meta Mesh now provides low-cost or free public WiFi to thousands of Pittsburgh residents.”**

*continued on page 4*



“More and more companies are now hiring for skills, not a degree. Having a MakerSpace on your resume is actually a good thing... It shows not only that you can work with other people, but that you have a platform to show-off the projects you have made.

– Chad Elish, President HackPGH, Co-Founder and Board Member, Nation of Makers

**Simply put: this energetic group with the leadership of Chad Elish, is ready to expand from “garage” to maker facility – more inviting to a broader public, able to function with greater capacity for production and education, on new tech equipment, or in a classroom setting.**

HackPGH has outgrown its 1,560 sf – the larger, improved space of 3,600 sf, will not only provide a home for new makers and ideas, but invigorate the neighborhood. Local residents are encouraged to become members, and programming to connect low-income individuals and older teens to HackPGH resources is underway – but the nonprofit requires a bigger classroom/meetup space, ADA and City code compliance, increased shop space, and HVAC to keep the organization running at peak efficiency while more of the public participates.

The Maker Movement has significant implications for manufacturing, economic and workforce development, education, healthcare innovation, technology advancements and – in Uptown – community revitalization. **The Ecoinnovation District team has spurred conversation about promoting Uptown as a center for innovation with an emphasis on the maker community.** HackPGH provides services that connect Pittsburgh’s manufacturing past to its future – and it provides leadership at the national level (through the *Nation of Makers*).

Locally in 2017, Catalyst Connection (our regional IRS), launched its “Making Your Future” campaign at HackPGH. 75 attendees included County Exec Rich Fitzgerald, Dennis Davin, DCED Secretary, and others, **promoted maker spaces and “making” as an avenue to an alternate career path, or to support regional employee growth for jobs in new manufacturing... it’s estimated, in the next 10-years, that 30,000+ new employees will be required.**

We applaud HackPGH’s civic and creative engagement in our region.

**We ask for your help in supporting this important project.**

Sincerely, 

Dale McNutt, Grant-Writer, Founder of StartUptown and now Director of 5thAVE STUDIO, member of the CCIP Executive Management Team for the Lower Hill 28-acre Development, and Uptown community resident

Photograph: L to R – the Ecoinnovation District’s bright brand; a HackPGH event spills out into Watson Street; a father and son build an Arduino board at one of the many weekly classes the nonprofit offers, and maker/clothing retailer, DailyBreadPA on the 4th floor packages clothing for shipment.... StartUptown/Avenu – now 5thAVE Studio, is a “beehive” of entrepreneurial activity,” says site owner, Dale McNutt.

BACKGROUND

# 5 Stories

## HackPGH – Community, Regional, and National Engagement

*These five stories give you more detail if you want it – OR you can skip to pages 14-20 if you want to first understand the design and costs of the proposed 3,600 sf renovation.*

Launch: Making Your Future

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Birth of Meta Mesh Wireless Communities

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Mini-Maker to Featured Faire in Pittsburgh

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Co-Founding Nation of Makers

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HackPGH: First in the Region!

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“Every time you see places like this it gives you a feeling of the things that can be accomplished for people who may not do this on a daily basis – If they have an idea, there’s a place they can come to try it out.”

– **Pennsylvania Secretary of Community and Economic Development, Dennis Davin**

### **ONE: HackPGH: October 2017, Launch of Making Your Future Campaign**

October 2, 2017, in the ground floor of 1936 Fifth Avenue, Catalyst Connection, Pittsburgh’s regional IRC led by CEO and President Petra Mitchell, with Board Chair person Raymond Yeager, launched “Making Your Future” with Dennis Davin, PA Secretary of Community and Economic Development; County Executive Rich Fitzgerald and President of HackPGH, Chad Elish. Chad is shown above speaking to the group. MYF spokespersons, Dan Francis and LaKeisha Wolf are shown to the right ...

... all promoting maker-spaces and “making” as an avenue to supporting regional employee growth for jobs in new manufacturing – Catalyst Connection, which has been helping regional manufacturers grow their businesses for more than 28 years, kicked off Pennsylvania Manufacturing Week and discussed the importance of the Governor’s Manufacturing PA initiative and the role of the PA Industrial Resource Centers in serving PA’s small and medium sized manufacturers.

**The campaign aims to seek the “makers” in the Pittsburgh region and connect them with manufacturing companies to encourage workforce development in the manufacturing industry – an invitation to rethink the world of manufacturing.**

Pennsylvania Manufacturing Week (September 30-October 6, 2017) is part of a nationwide effort to change people’s perceptions of manufacturing today, draw attention to the amazing career opportunities available in a variety of sectors, and educate the public on the significant impact manufacturing has on the economy.

HACKPGH connected the Catalyst PR Firm, Denny and Associates, to Nation of Makers, state and regional MakerSpaces, and national thought leaders to provide a deeper base of understanding of the maker movement. Hosting the launch, HackPGH also provided a video stage for the spokespersons Dan and LaKeisha. *See MakingYourFuture.org*

**Making YOUR Future™**



**CATALYST CONNECTION™**  
Your Strategic Partner for Manufacturing Growth

Photograph: L to R — Chad Elish, speaks to the group; Making Your Future spokespersons Dan Francis and LaKeisha Wolf — Executive Director of Hill District-based non-profit Ujamaa Collective, focusing on the business affairs and cooperative development of emerging Africana women-owned craft enterprises.



Meta Mesh Wireless Communities, was born within the walls of HackPGH. Adam Longwill, Executive Director says, “the tools and technologies that HackPGH provided, allowed us to develop into the successful charity we are today — Meta Mesh now provides low-cost or free public WiFi to thousands of Pittsburgh residents.”

— Adam Longwill, Executive Director, Meta Mesh Wireless Communities

## TWO: HackPGH: Birth of MetaMesh Wireless Communities

**“The UN has declared Internet access a human right, but 23% of Pittsburghers don’t have access. We are going to change that,”** said the organization’s Director of Outreach, Becky Zajdel.

Meta Mesh Wireless Communities (Meta Mesh), which was spawned at HackPGH at StartUptown/Avenue (Now 5thAVE Studio) in 2012, has a primary broadcast node on the site rooftop — HackPGH hosts the data center equipment racks — the point of origin for broadcasting free WiFi to Upper Hill/Bedford Village. The business — now based in the Allentown neighborhood of Pittsburgh — recently received a \$120,000 grant from the Hillman Foundation to build a city-wide public WiFi network called PittMesh that will act as the infrastructure to deliver donated bandwidth from local Internet Service Providers.

### ***Meta Mesh Wireless Communities three main areas of focus:***

FIRST, expanding the PittMesh Community Wireless Network, a community owned, operated, and expanded network to proliferate internet access into business districts and impoverished communities — Meta Mesh will be able to help the City of Pittsburgh accomplish its ambitious goal of providing ubiquitous public WiFi access to city residents and visitors by building long-distance WiFi links that allow for transmission of internet bandwidth to almost any neighborhood in Allegheny County. Their work has been featured on NPR’s Science Friday, the Pittsburgh Post-Gazette, and Public Source, among other media sources.

SECOND, private consulting/contracting related to network administration and wireless network installation.

THIRD, Meta Mesh writes grants for communities that want to bring a Community Wireless network to their neighborhood. Grants include consultation and community education for both adults and children.

*“Too often the high initial and recurring costs for an “enterprise grade” public WiFi network are too much for a small neighborhood to bear. We are perfecting a model that requires low upfront investment, no monthly fees, and organizes existing people and neighborhood resources to maintain and monitor good connectivity for the public benefit.”*



Photograph: L to R — Becky Zajdel, Co-Founder; Uptown node and Allentown rooftop node; PittMesh currently has 64 live sites (Live sites are red pins.) comprised of 108 devices. There are 33 point-to-point links active: 8 WiFi and 25 VPN. Live connectivity data is coming soon.



The Maker Faire “is enhancing what Pittsburgh is in a 21st century way,” said Mayor Bill Peduto, referencing the region’s entrepreneurship and manufacturing history. The list of participants includes students, crafters, engineers and local startup companies, all centered around the “maker” theme. – Mayor William Peduto and the Pittsburgh Maker Faire team

### THREE: HackPGH: Mini-Maker Faire to Featured Faire on Pgh’s Northside

Maker Faire is a gathering of people who enjoy learning and who love to share — from engineers, artists, scientists and crafters — a venue to show-off regional creativity, craft and DIY tech. The first Maker Faire was held in San Mateo, Calif., in 2006, 20,000+ people. The concept has grown to include more than 100 mini-maker faires around the world. Pittsburgh events have drawn over 7,500 visitors and participants.

FOUNDED: Mini-Maker Faire Pittsburgh was founded in 2011 by HackPGH, Robert Blackwell (StartUp-town/Avenu, now 5thAVE Studio resident), and the Children’s Museum. Held at the Nova Place community park and the Children’s Museum, it drew over 200 exhibits, performances and presentations. The aim of this family-friendly event is to inspire people of all ages to roll up their sleeves and become makers.

In 2015 the founding team took Maker Faire Pittsburgh to the next level. Hiring Donna Goyak (*currently the executive director of Chatham Baroque*) — together they put Maker-Faire Pittsburgh on the national map. Kayce Dewey, was Faire Director in 2016, now working with the AlphaLab Gear International Hardware Cup. In 2016-17 Chad Elish of HackPGH went on to help produce Maker Faire Bay Area (where the first and largest maker faire in the country was held), Orlando Maker Faire, and Maker Faire Milwaukee.

Maker Faire PGH implemented an “education day” backed by Remake Learning, Chevron, and the Grable Foundation that brought 1,500 students and underserved youth to experience the faire a day early in 2015. Providing educational programming during that day and throughout — a parent/guardian received a free ticket to return during the main Faire. — **“2015 was one big celebration,” said Chad Elish of Hack Pittsburgh. Elish was the force behind the first three mini-maker faires that were held in Pittsburgh.** Those venues were smaller and quieter Chad says. “We never thought in our wildest dreams that this would grow to this size when we created it five years ago, this is a game-changer. Pittsburgh is becoming a tech hub, a Silicon Valley of the east coast!”

CHILDREN’S MUSEUM OF PITTSBURGH has also participated in the White House Maker Faire from 2013-15 and the Congressional and National Maker Faire in 2015 and 2016. The Museum and its MAKE-SHOP have served as a Maker Corps site for the Maker Education Initiative, created Mobile MAKESHOP, Youth Maker workshops and adult MAKEnights, and are leading the Google-funded Making Spaces project to facilitate creating makerspaces in schools and libraries across the country — **Much evolved from that first contact with the inspired HackPGH team.**



HackPGH



“The maker movement starts with the community; the ecosystem of makers and all that they do and create. More and more, we are seeing makers take on challenges both locally and globally, using their knowledge and skills to improve their lives and the lives of others in their communities.” – Nation of Makers, Dorothy Jones-Davis, Executive Director

#### **FOUR: HackPGH: Chad Elish Helps Co-Found the Nation of Makers**

Nation of Makers is a national nonprofit dedicated to helping support America’s maker organizations through advocacy, resource sharing, and the building of community within the maker movement and beyond.

In June 2014, President Obama launched the Nation of Makers initiative, through the Office of Science and Technology Policy — hosted a White House meeting of over 175 organizers of makerspaces. Passionate and creative organizers shared their ideas for building vibrant and inclusive Maker communities in cities and towns across the country — an all-hands-on-deck effort to give many more students, entrepreneurs, and citizens access to a new class of technologies—such as 3D printers, laser cutters, and desktop machine tools — to design, build, and manufacture just about anything, as well as increased access to mentors, spaces, and resources to support *making*.

**Chad Elish from HackPGH was invited to help jump-start the endeavor and is now a Board Member of Nation of Makers.**

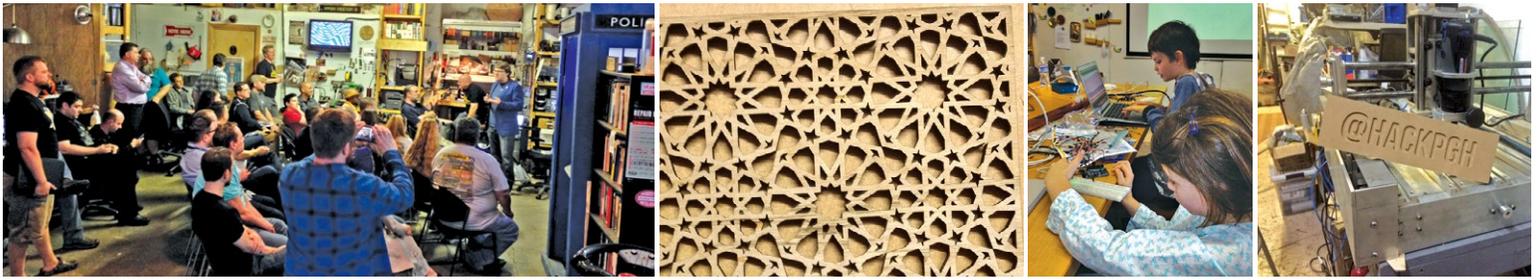
**MISSION:** to support the full range of organizations that impact makers by encouraging connections, broadly sharing resources, facilitating funding opportunities, engaging in policy development, and advocating for the maker movement. We help maker organizations amplify the passion, innovation, creativity, and diversity of the maker community, to maximize both local and global impact.

**VISION:** to build a society where everyone has access to the tools, technologies, experiences and knowledge to make anything; to create a thriving, connected, and inclusive community of practice where collaboration fosters a culture of abundance.

**President Obama recognized the Maker Movement as a national priority for a variety of reasons.**

- *making* advances values and disposition that are ends in themselves, such as curiosity, creative confidence, self-expression, invention, and collaboration.
- *making* has a role to play in education and life-long learning. It can inspire more young people to excel in STEM (science, technology, engineering and math) subjects, connect their learning to real-world, personally meaningful problems, and reverse the decline in student engagement.
- *making* could help promote innovation in hardware and manufactured products. In the same way that cloud computing and open source software has lowered the costs and the barriers to entry for digital innovation, makerspaces could make it easier for an entrepreneur with a great idea for a manufactured product.
- *Makers* can become an enormous asset for solving societal challenges.

Photograph: L to R — Chad with Ian Cole, Nation of Makers board member and Co-Founder of The Maker Effect Foundation, at the White House; Nation of Makers 2014 White House Maker Faire; Chad with Kip Bradford, Co-Founder National MakerFaire, DC; Obama at TechShop, Pittsburgh; and a national maker shop learning session.



“The expanded space that HackPGH envisions will allow it to increase engagement activities and programming to our diverse community, especially disadvantaged youth and young adults so that they may begin to see a future for themselves in the tech movement. We are proud to have HackPGH, the region’s first makerspace, in our neighborhood.”

— Uptown Partners, Jeanne McNutt, Executive Director, *extract from her letter of support*

## **FIVE: HackPGH: First Maker Space in the SWPA Region**

Here’s how the organization speaks about itself at <https://hackpgh.org/> —

“As Pittsburgh’s oldest maker-space we have been educating, sharing resources, and helping our community grow within the maker movement for nearly a decade! From our open classes to our community events, we encourage fixing things instead of replacing them and finding meaningful solutions to everyday problems. HackPGH understands that making starts with the community. Sharing knowledge and skills to help each other and the community is a tenet of HackPGH.”

### **SITE BACKGROUND: 11+ years of Community Redevelopment & Entrepreneurship**

**EVOLUTION:** StartUptown, PA nonprofit and Federal 501c3 was born in January 2010. Throughout 2007-2009 the 1936 Fifth Avenue site had birthed co-working in Pittsburgh, and supported HackPGH as they opened on the ground floor — both endeavors brought a flurry of creative activity into Uptown and promoted the importance of an entrepreneurial/maker culture in the city core.

**IN THE BEGINNING:** At 1936 Fifth Avenue StartUptown began as an incubator/coworking space “by default” in October 2006 when Dale McNutt shuttered a corporate design business of 9 employees after 26 years. The building at 1936-1942 Fifth Avenue is 13,000 square feet with two residential/live-work apartments and 10,000 square feet of commercial space. Zoned mixed-use, McNutt’s business, Soho and Company Inc., had operated out of this Uptown site since 1993. He purchased the building to begin its renovation in Spring, 2002.

Needing to fill the building with activity — the McNutts found their first tenant, Nakturnal LLC, in July 2007 through community engagement. Nakturnal provided socially innovative event production, sponsorship and marketing services for arts and entertainment organizations. Female owned and staffed, they asked to rent space on the big studio loft during their coordination of the Uptown community’s Sprout Fund mural selection. They were four principles, and up to 12 interns each college semester. At their Wednesday night meeting were 16 females, all but one under 30 years of age — the site was baptized in a co-working feminine aura and work hours that often extended until 2:00AM.

**HACKPGH:** By October, 2007, 20-year-old University of Pittsburgh entrepreneur Nick Pinkston — building Cloudfab, to jump-start the new decentralized manufacturing revolution — rented the remainder of the loft space through an ad posted on Craigslist.

*continued on page 11*



## FIVE: HackPGH: First in Pgh — continued



**Nick also co-founded HackPittsburgh (now HackPGH), a tech-based educational collaborative and maker's space, on the building's ground floor.** Through Nick's insightful thinking across a wide range of topics, Dale McNutt was motivated to gain perspective about the scope of entrepreneurial activity in Pittsburgh just bubbling under the surface, and its potential to energize his community's redevelopment.

**As recipient of Maker Faire Detroit Editor's Choice Award in July 2011, HackPGH garnered a national reputation.** On a Friday night, up to 25 gathered for an evening of learning and networking; or for a Thursday evening lecture; or during daily open shop hours to complete a project.

**HackPGH leadership teams have always been dedicated/motivated to excel** — many like Nick (left) went on to bigger endeavors — selling CloudFab to VistaTek — he founded Plethora, a 40-person, \$16M funded "factory of the future" and was voted one of Forbes 30-under-30 in 2016. Co-founder Matt Stultz is MAKE magazine's digital fabrication and reviews editor — the bible of the maker-movement. He founded 3DPPVD and Ocean State Maker Mill; others left to work for Brooklyn's 3D-printer company, MakerBot.



Throughout its 10-year history StartUptown had hosted 87 companies from robotics to granola, filmmakers to medical devices and hip clothing company DailyBreadPA. NoWait (a restaurant-wait app) grew from 4 to 22 employees in Uptown, then to 60 at Revv in Oakland. It sold to Yelp for \$40M.



StartUptown developed the Paramount Film Exchange opened in 2014, now host to Forest Devices, Birdbrain Technologies and award-winning TrademarkVision, voted best AI Business Startup in 2017 by the AIConics.



StartUptown merged with Revv Oakland in early 2017, and formed Avenu through a \$400,000 innovation grant from the Hillman Foundation. **Avenu's nonprofit mission is now heavily focused on economic development along the 5th/Forbes Avenue corridor.** It functions as fiscal agent for newly formed InnovatePGH — a partnership of the region's leading innovation and talent development organizations that have joined together to respond to the Brookings Institution's recommendations in "Capturing the Next Economy: Pittsburgh's Rise as a Global Innovation City" — Merging Revv Oakland with StartUptown, created a campus of 7 entrepreneurial work sites and 48 companies employing 200+ from Uptown through Oakland with another \$1M new site investment through Oakland Real Estate slated for 2018. \$3.7M+ in PA Keystone Innovation Zone (KIZ) benefits has been awarded to Avenu companies over the past 9 years in the form of grants, paid internships, and PA tax credits. Three sites are single offices: Yelp/NoWait, StitchFix, and Containership — **all rising to the top of their game in diverse businesses that improve customer experience, assist in personal style choices, and link corporate "cloud" systems.**



The original site at 1936 Fifth Avenue was pulled from the Avenu portfolio and Dale McNutt formed 5thAVE Studio — host to HackPGH, two live-work companies, a medical device company, and 8 other start-ups or coworking teams. Our newest live-work company is hair salon startup Moxy Chop Studio.



## FIVE: HackPGH: First in Pgh — continued

**TOOLS AND EDUCATION:** HackPGH has a full calendar of events which are open to the public and usually free. There are interesting talks, presentations, or classes and the shop is open to the public Monday and Saturday nights at 7:00PM — the best time to come and tour. *A lot gets packed in to the present 1,560 sf:*

- **Multiple 3D Printers** — whether it's ABS or PLA, heated bed, or unheated bed, members find what's needed.
- **The Powerful 150W Laser Cutter** — with a 2 x 3 ft. bed, can cut wood, acrylic, leather, wool, and certain types of rubber. It can etch wood, acrylic, glass, granite, glazed ceramics, and many other types of materials.
- **The Woodshop** — is equipped with a 10 inch blade table saw with an extended fence for cutting large sheets. Other tools include a miter saw, drill press, grinder, 10 inch thickness planer, 14 inch bandsaw, router table, 4 inch jointer, and free standing belt/disk sander with 5 inch belt and 12 inch disk. We are also equipped with multiple hand tools including orbital sanders, belt sanders, circular saws, jig saws, etc.
- **The Metal Fabrication Area** — is well equipped for most prototyping and hobby level needs. The metal shop consists of both welding, fabrication and machining equipment and is 120 sf surrounded with welding curtains. At the center lies a 5x5 ft. steel welding table that can be used for fabrication. The workhorse of our welding setup is a 130 amp Lincoln MIG welder.
- **Other Equipment** — includes a plasma cutter, a stick welder as well as a TIG machine with limited capabilities. For prep work and other fabrication HackPgh provides a 30" shear/brake and slip roll combo, as well as a rotary hacksaw that can be used to cut various metals. Other tools include a bench grinder, sawzalls, hand grinders, drill press and various bits and accessories.
- **Machining** — Members have the ability to do lite machining with both a manual drill mill and metal lathe. The Grizzly drill style mill is DRO readout equipped and also has a rotary indexing table to allow the operator to drill or cut work at exact intervals around a fixed horizontal or vertical axis. Also available is a 12" x 36" Atlas lathe (also DRO equipped) which includes a 5" three-jaw and an 8" four-jaw chuck. All necessary tooling and meteorological equipment is available!
- **Electronics Projects** — available are lots of components like resistors, capacitors, inductors, transistors, and IC chips and analog and digital oscilloscopes, multimeters, power supplies, digitally controlled soldering iron, and many variable power soldering irons. Including cutters, wire strippers, solder suckers, breadboards, perfboards, and any other tool you can imagine. Members have the ability to mill PCB's using our CNC machines.
- **The Fabrication Area** — features an embroidery machine, vinyl cutter, and all the odds and ends members might need for a project.

END



# Ecoinnovation

## HackPGH: In the Right Place at the Right Time

*Pittsburgh started as a maker city hosting great minds such as Andrew Carnegie, George Westinghouse, Nikola Tesla, George Ferris, Frank Conrad and more. We are now seeing a resurgence in that creative maker spirit.* — HackPGH, President Chad Elish

**Introductory Letter — William Peduto, Mayor City of Pittsburgh for Ecoinnovation District Plan:**

“Change is one of the key forces of nature in cities. Cities and communities can work to guide change in ways that realize bold community visions for the future, or they can choose to respond to change with fear and struggle in vain to turn back the hands of time. Pittsburgh has gone down both paths in its history, and in Uptown, we have the unique opportunity to test our shared aspirations of sustainable development, livability innovation and entrepreneurship in ways that benefit us all. That’s what the Uptown EcoInnovation District Plan is all about.

Uptown is one of the oldest parts of our city, and at the same time, full of new opportunities and fresh ideas. Sandwiched between Downtown and Oakland, Pennsylvania’s second and third largest employment centers, Uptown already has a rich tapestry of community organizations and institutions including but not limited to Uptown Partners, Duquesne University, UPMC Mercy Hospital and StartUptown (now Avenu). These organizations are all actively using their diverse skills, expertise and resources to improve the community.

But this plan doesn’t just propose new energy efficient buildings, infrastructure and livability improvements — it also proposes the workforce development programs needed for residents of Uptown and the Greater Hill Community to gain the skills needed to build and maintain these improvements and start the small businesses to grow Pittsburgh’s clean tech economy.

**The result is a bold vision for the future where everyone is invited to come, to innovate, to build new businesses and to find a livable community to call home. The lessons we learn here, in Uptown, will shape the next generation of neighborhood plans across the city.”**

THE PLAN

# DESIGN-Build

## HackPGH: Community Maker Space Expansion

*Over 100 Mayors have taken the Mayors Maker Challenge because of its potential to foster economic development, job creation, and entrepreneurship in advanced manufacturing and hardware. These efforts are helping entrepreneurs make the transition from Maker to manufacturer.*

— Huffington Post, 2014, Nation of Makers

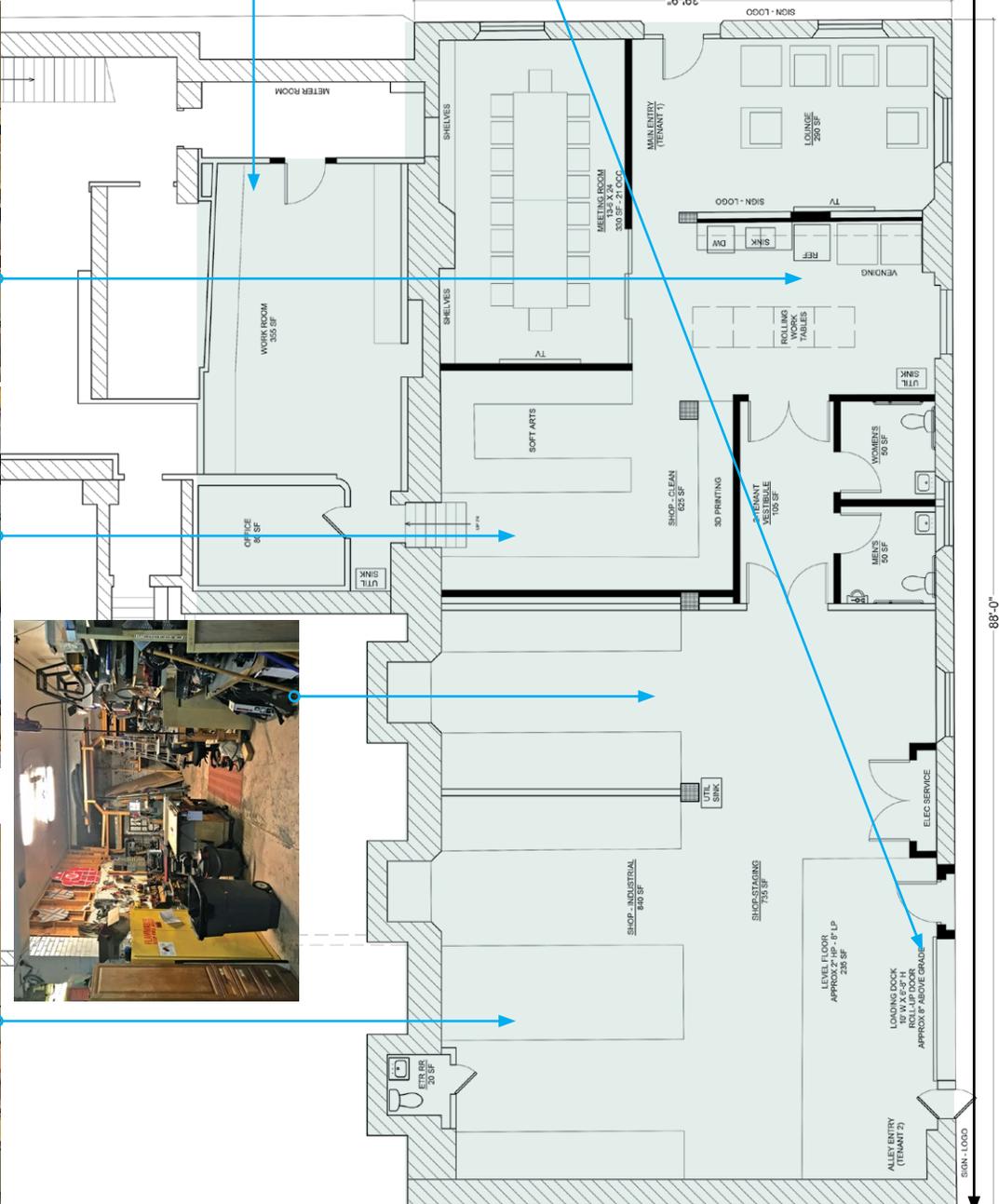
**Existing Conditions:** This energetic group is ready to expand from “garage” to maker *facility* — more inviting to a broader public, able to function with greater capacity for production and education.

Existing conditions in the maker space, left, or in expanded area (where Lechtzer, Inc. has now moved out, center.) — a total of 3,600 sf of renovated space. Exterior sidewalk and parking lot will be enhanced — newly poured concrete with minor drainage repairs, right.



# PLAN: HackPGH Build-Out – Plan with Existing Conditions

#	Revision Date	The Downtown Design Company 1536 Cobble Street #1   Pittsburgh, PA 15219   (412) 298-7187 www.thedowntowndesigncompany.com   info@tdc.com	HackPGH: Community MakerSpace Expansion 1936 Forbes Ave.   Pgh, PA 15219 Parcel 11-K-10   PL1 18-B-TBD	AVE: Schematic Design for Furniture, Fixtures & Equipment	02-20-2018 1/4" = 1'-0" DDC #1804	<b>A2.1</b>

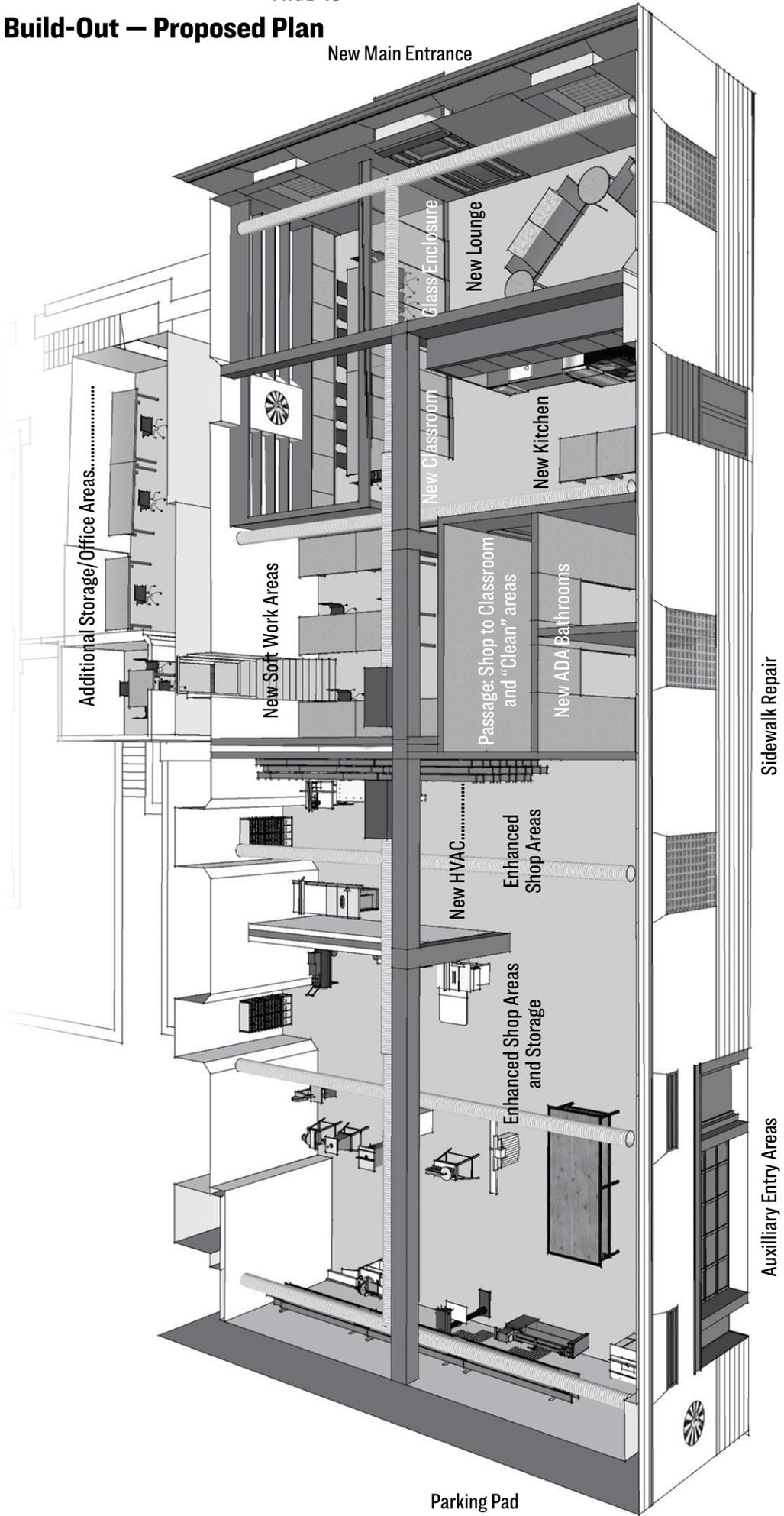


88'-0"

**PLAN: HackPGH Build-Out – Proposed Plan**

**Notes: 3D Floorplan with notations. Total 3,600 sf.**

- Classroom/meetup room is glass/aluminum structure/glass from floor up to ceiling on both sides. Privacy can be gained by adding vinyl-like translucent frit that can double as white board surfaces. Additional glass whiteboards could be added to either side.
- Bathroom hall connector, doors on either end should be glass and back wall should be if not glass, a cool translucent or textured/folded metal surface.
- In the end, this wants to look “maker cool” using lighting, metal, glass, finished plywood panel, or other industrial materials along with drywall.
- HVAC can be installed in a dry-wall bulkhead that runs the width of the room over bathrooms.



Parking Pad

# PLAN: HackPGH Build-Out – Exterior

**Entrances:** Main Entrance will be on Jumonville Street, image below, bottom. The rear entrance will require a new ADA compliant door on right, with a new roll-up garage door to the left. That door remains open when an event spills into Watson Street, image above.

*Photographs to right show existing conditions.*



Watson Street entrance: with open roll-up door and Glass person-door (right).

New back sidewalks are proposed along building backside with some sandstone and gutter repair.

Parking pad to left of back.



New Main Entrance on Jumonville Street (it intersects 5th Avenue above, right/not shown). Graphics, or hoiographic or other lighting effects or 3D structures will highlight, the exterior entrances.

Exterior lighting will be supplied by the site owners. Video cameras will be installed by HackPGH.

## PLAN: HackPGH Build-Out – Interior view

### Kitchen, Connecting Entry, Classroom and Soft Work Area in background:

- Classroom/meetup room is glass/aluminum structure/glass from floor up to ceiling on both sides. Privacy can be gained by adding vinyl-like translucent frit that can double as white board surfaces. Additional glass whiteboards could be added to either side or maybe use double glass panels with frit inside on both?
- Bathroom hall connector, doors on either end should be glass and back wall should be if not glass, a cool translucent or textured/folded metal surface.
- In the end, this wants to look “maker cool” using lighting, metal, glass, finished plywood panel, or other industrial materials along with drywall.
- HVAC can be installed in a dry-wall bulkhead that runs the width of the room over bathrooms. *Photograph below shows existing conditions.*



### Expansion spaces:

New interior view on the “clean” side of the space, connecting hallway/bathrooms to left at glass doors. Kitchen area with vending machines on right.

Classroom/meetup space directly ahead.

Soft manufacturing areas to left of classroom. 3D printing/fabric, etc.

Lobby/lounge area to right at Jumonville entrance. (Not shown here).

Total expansion space 2,040 sf.

**COST: HackPGH Build-Out — Nello detailed estimate follows.****SOFT COSTS:**

Planning/Application Narrative(s)	\$ 4,500.00
Administration	10,500.00
Illustration	900.00
Architect—initial bid/CITF application	3,600.00
Architect—finished drawings	15,000.00

**HARD COSTS:**

Rehabilitation: estimated via Nello Construction/Design-Build

– Interior	490,281.00
– Exterior	18,000.00
– Allowance 15%	75,000.00

**Target to Raise \$ 617,781.00**

HackPGH remains hopeful of receiving a **\$250,000 CITF Grant** to help jumpstart this renovation project. We'll know the DCED decision by October 1, 2018.



**“What the Maker movement does, what technology does, what the information revolution does, is it allows all children and adults to suddenly be a part of this creative process.” – President Barack Obama**

## Nello Construction Estimate

Inserted behind this breaker page — cost details.



Photograph: Making Liquid Nitrogen Ice Cream

**NELLO CONSTRUCTION**

PROJECT #:

Community Maker-Space

BID DATE:

TBD

ITEM	QUANTITIES	UNITS	PRICE PER UNIT	SPEC. SECTION	MATERIAL	LABOR	EQUIP	SUB	TOTAL	SUBCONTRACTOR
1 SELECTIVE DEMOLITION								\$ 15,360.00	15,360	NELLO
2 SITE WORK								\$ 30,800.00	30,800	NELLO
3 INTERIOR RENOVATION								\$ 118,700.00	118,700	NELLO
4 MISCELLANEOUS ROUGH CARPENTRY								\$ 9,640.00	9,640	NELLO
5 FINISHED CARPENTRY (CASEWORK & COUNTERTOPS)								\$ 23,170.40	23,170	NELLO
6 DOORS AND HARDWARE								\$ 14,251.20	14,251	
7 GLAZING AND STOREFRONT								\$ 10,560.00	10,560	
8 FLOORING FINISHES								\$ 14,568.00	14,568	
9 EXTERIOR CANOPY								\$ 2,500.00	2,500	
10 APPLIANCE ALLOWANCE								\$ 7,000.00	7,000	
11 PLUMBING								\$ 75,000.00	75,000	Nello Plug
12 HVAC (MECHANICAL)								\$ 29,000.00	29,000	Tudi Mechanical
13 ELECTRICAL								\$ 53,000.00	53,000	Light Company
<b>General Conditions</b>										

Cost	462,074
Overhead / Profit	46,207
Surety Bond	n/a
Maintenance Bond	n/a
<b>TOTAL</b>	<b>508,281</b>

**Qualifications:**

- Value Engineering and Design-Build Assist
- No Bonds, Permits or Testing
- Includes Install of Gypsum Wall System (3-5/8" MTL Studs, 5/8" Type X GWB, Level 4 Finish and SW Promar 200 Paint)
- Includes acoustical ceilings in bathrooms only and painting of existing touched-up ceilings
- Includes 3,600 Carpet Tile up to \$2.25 SF
- Includes up to 180 SF of Solid Countertops (@ \$40 SF)
- Includes Case-Work up to 60 LF (@ \$150 LF)
- Includes up to 1,200 SF of Finished Plywood Walls
- Includes Asphalt Paving of (4) parking spots up to 800 SF
- Replacement of Sidewalk sections up to 300 SF
- New Canopy at Entrance Allowance of \$2,500
- Install of four 2'x4' LED Light Fixtures
- Install of four occupancy sensors
- Install of ten ceiling mount occupancy sensors
- Install of seven exit signs and four emergency wall packs
- Install of 26 duplex receptacles
- Allowance for 6 dedicated circuits
- Install 4 kitchen GFI
- Allowance to install 6 floor boxes for power/data for desk/furniture
- Allowance for 3 HVAC power feeds (3 phase, 208 volt, 40 amp)
- Install of 12 fire alarm devices, 1 fire alarm panel and 3 pull stations
- Install of two split systems with condensing units at grade outside of indoor unit locations
- Spiral duct distribution
- Toilet exhaust system

**Exclusions:**

- New cylinders and locks
- Exterior Utility work
- Off hours work shifts
- Structural work
- Steel Fabrication
- Fire Suppression and Fire Proofing
- Main Service work for Water, Electric and Gas
- Engineering and Shop Drawings
- Gas piping alterations
- Meter Replacement and Relocation

# Addendum

## HackPGH: Community Maker Space Expansion

*“From Rust Belt cities like Pittsburgh to rugged-outdoors towns like Burlington, Vermont, the maker movement is providing localities a framework for unlocking growth and engaging citizens.”*

— *Revitalizing Industry in American Cities*, Brooks Rainwater, National League of Cities

23 — HackPGH — Board of Directors

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24 — HackPGH — 501c3 Certification

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29 — Letters of Support

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30 — The Creative Commons — Writer’s Statement

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*“We have people with GED’s teaching PHD’s new skills and vise versa.  
We teach everything from robotics to soft arts, soldering  
to woodworking, welding, machining, 3D printing, and more.*

*Our community comes together to build something bigger then itself.  
We strive to be a leader and share our successes as well as our failures  
with Pittsburgh’s maker community and beyond.”*

— President of HackPGH, Chad Elish, 2018

## HackPGH Board



- **Chad Elish - President** - Chad is a driving force in the maker movement. He helps facilitate making as HackPGH's President, by producing Maker Faires across the US, and is a founder of Nation of Makers. He travels across the world to speak and grow the maker community. He's here to aid in the movement and to help all of the people who weren't able learn these important maker skills. [chad@hackpittsburgh.org](mailto:chad@hackpittsburgh.org)

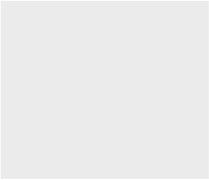
Chad Elish, President, HackPGH — 412-219-2723 [chad@hackpittsburgh.org](mailto:chad@hackpittsburgh.org) 1936 Fifth Avenue, Pittsburgh, PA 15219



- **Dave Coakley - Vice President** - Dave was recently in the U.S. Marines. After an accident, he decided to continue his efforts to help others as a civilian, by becoming a board member at HackPGH. He has always had a passion for making and uses his skills to help with day to day operations, teach classes, and sustain relationships.



- **Geno Soroka - Secretary** - Geno is an Electric Engineer. He is a wiz at anything that has a circuit in it. Geno works with high voltage for a living and runs a Nikola Tesla Meetup at the shop. He also teaches many classes and gives one on one help to those in need of project help.



- **Rob Martin - Treasurer** - Text to come:



- **Rebecca Zajdel** - Board Member - Becky is a "citizen of the world," born and raised in North Braddock — she then headed to Juniata College for her double BA in International Politics and History. Moving back and forth between the US and Central Europe as a Political Science PhD candidate and teaching fellow at Pitt, she left to work for an international law firm before joining Pittsburgh's growing startup scene. Becky is happy to be part of the Meta Mesh team and loves working with the members at HackPGH!



- **Adam Longwill** - Board Member - Former Data Center Analyst and Linux System Administrator, he founded MetaMesh in 2012 — a startup focused on ensuring building Community Wireless Networks around the world is easy and comprehensible. Meta Mesh hosts the first Community Wireless Networking online store where routers flashed with various firmwares and routing protocols are sold to community groups. Executive Director for MetaMesh Wireless Communities.



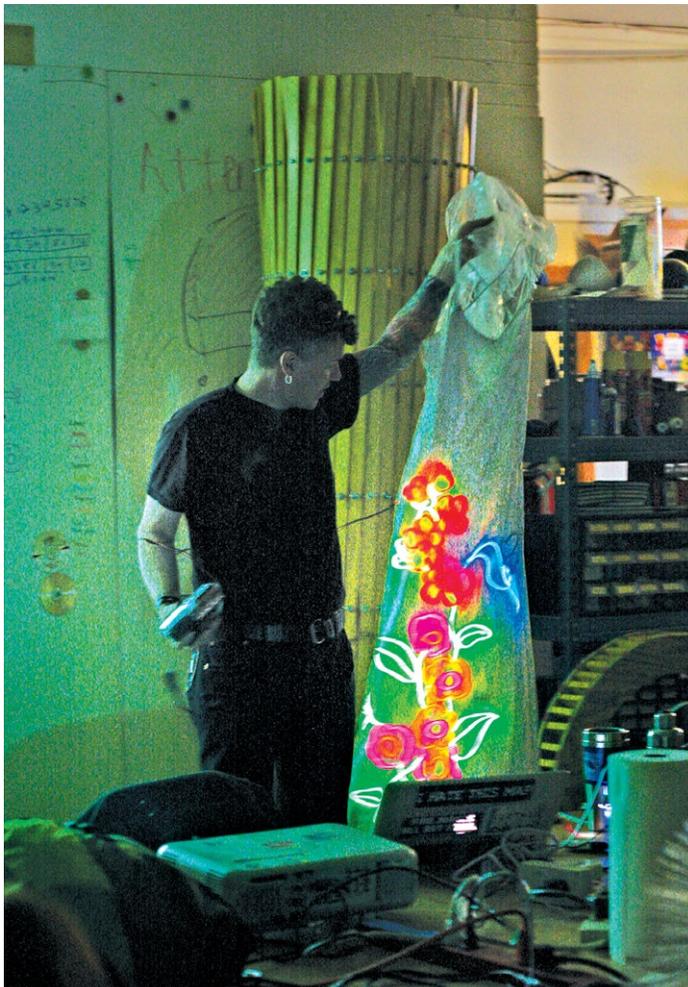
Above: The extraordinary energy and insight of HackPGH President Chad Elish propels Pittsburgh's oldest makerspace, "We have been educating, sharing resources, and helping our community grow within the maker movement for over a decade!"

## Nonprofit Certification

is inserted behind this breaker page —

Articles of Incorporation, Conflict of Interest, and organization By-Laws are available upon request.

EIN: 82-2021084



Photograph: HackPGH member Jet teaching a class on EL Wire and fabric. Think “flexible neon.”

INTERNAL REVENUE SERVICE  
P. O. BOX 2508  
CINCINNATI, OH 45201

DEPARTMENT OF THE TREASURY

Date: **AUG 11 2017**

HACKPGH  
1936 FIFTH AVE  
PITTSBURGH, PA 15219-0000

Employer Identification Number:  
82-2021084  
DLN:  
26053614002877  
Contact Person:  
CUSTOMER SERVICE ID# 31954  
Contact Telephone Number:  
(877) 829-5500  
Accounting Period Ending:  
December 31  
Public Charity Status:  
170(b)(1)(A)(vi)  
Form 990/990-EZ/990-N Required:  
Yes  
Effective Date of Exemption:  
July 6, 2017  
Contribution Deductibility:  
Yes  
Addendum Applies:  
No

Dear Applicant:

We're pleased to tell you we determined you're exempt from federal income tax under Internal Revenue Code (IRC) Section 501(c)(3). Donors can deduct contributions they make to you under IRC Section 170. You're also qualified to receive tax deductible bequests, devises, transfers or gifts under Section 2055, 2106, or 2522. This letter could help resolve questions on your exempt status. Please keep it for your records.

Organizations exempt under IRC Section 501(c)(3) are further classified as either public charities or private foundations. We determined you're a public charity under the Section 501(c)(3) list on this letter.

If we indicated at the top of this letter that you are required to file Form 990/990-EZ/990-N, our records show you're required to file an annual information return (Form 990 or Form 990-EZ) or electronic notice (Form 990-N, the e-Postcard). If you don't file a required return or notice for three consecutive years, your exempt status will be automatically revoked.

If we indicated at the top of this letter that an addendum applies, the enclosed addendum is an integral part of this letter.

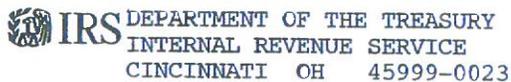
For important information about your responsibilities as a tax-exempt organization, go to [www.irs.gov/charities](http://www.irs.gov/charities). Enter "4221-PC" in the search bar to view Publication 4221-PC, Compliance Guide for 501(c)(3) Public Charities, which describes your recordkeeping, reporting, and disclosure requirements.

HACKPGH

Sincerely,

*Stephen a. martin*

Director, Exempt Organizations  
Rulings and Agreements



DEPARTMENT OF THE TREASURY  
INTERNAL REVENUE SERVICE  
CINCINNATI OH 45999-0023

Date of this notice: 06-29-2017

Employer Identification Number:  
82-2021084

Form: SS-4

Number of this notice: CP 575 E

For assistance you may call us at:  
1-800-829-4933

HACKPGH  
1936 5TH AVE  
PITTSBURGH, PA 15219

IF YOU WRITE, ATTACH THE  
STUB AT THE END OF THIS NOTICE.

#### WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 82-2021084. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

When filing tax documents, payments, and related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear-off stub and return it to us.

When you submitted your application for an EIN, you checked the box indicating you are a non-profit organization. Assigning an EIN does not grant tax-exempt status to non-profit organizations. Publication 557, Tax-Exempt Status for Your Organization, has details on the application process, as well as information on returns you may need to file. To apply for recognition of tax-exempt status under Internal Revenue Code Section 501(c)(3), organizations must complete a Form 1023-series application for recognition. All other entities should file Form 1024 if they want to request recognition under Section 501(a).

Nearly all organizations claiming tax-exempt status must file a Form 990-series annual information return (Form 990, 990-EZ, or 990-PF) or notice (Form 990-N) beginning with the year they legally form, even if they have not yet applied for or received recognition of tax-exempt status.

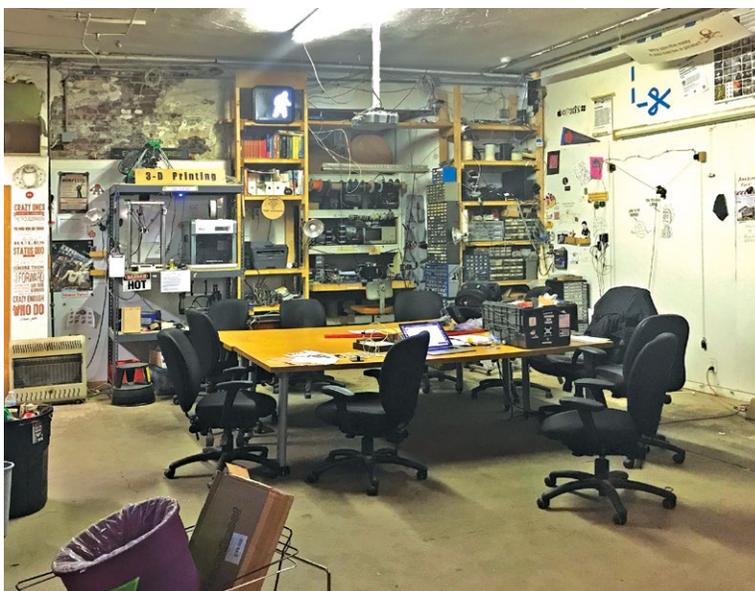
Unless a filing exception applies to you (search [www.irs.gov](http://www.irs.gov) for Annual Exempt Organization Return: Who Must File), you will lose your tax-exempt status if you fail to file a required return or notice for three consecutive years. We start calculating this three-year period from the tax year we assigned the EIN to you. If that first tax year isn't a full twelve months, you're still responsible for submitting a return for that year. If you didn't legally form in the same tax year in which you obtained your EIN, contact us at the phone number or address listed at the top of this letter.

For the most current information on your filing requirements and other important information, visit [www.irs.gov/charities](http://www.irs.gov/charities).



## Letters of Support

14 Letters of Support were provided in our application for an Allegheny County CITF Grant in February 2018. They can be provided upon request.



### Letters of Support are from:

Uptown Partners of Pittsburgh

AlphaLab Gear

Daniel Lavelle, Councilman District 6

Jake Wheatley, State Rep, 19th District

URA, Tom Link, Director CIE

Meta Mesh Wireless Communities

Catalyst Connection, Regional IRC

Kayce Dewey, Allegheny County  
Economic Development

Seiso, Jonathan Zeolla, CTO

Nation of Makers

Digital Harbor Foundation

Denny Civic Solutions

Avenu/formerly StartUptown

Workshop Pittsburgh

## The Creative Commons — *Writer's Statement*

**Creating an entrepreneurial culture** starts in preschool and ends with the realization that each space we inhabit is a living space for “Making” — from Picasso’s living room, to pie-baking in the kitchen; from art studio, to research laboratory, to automated manufacturing floor — this work, whether propelled through chemistry, physics, biology, creative arts or psychology, is all about making and extending our human boundaries. *AND it’s not just about STEM education.* It includes quality arts education and exposure to artistic endeavors, and a strengthened personal psychology — all working together to build a broad entrepreneurial culture.



— Dale McNutt

*Founder of StartUptown, now Avenu; and founder of the 5th AVE Studio; business owner, designer/artist, and Uptown resident (26 years) — stakeholder and participant in the Uptown Ecoinnovation District — member, CCIP Executive Management Team for the Lower Hill 28 acre development.*



Photograph: President Chad Elish, left, with co-founder of MetaMesh Wireless Communities, Beck Zajdel, and HackPGH member Jesse Latimer.