

# Equitech 2030.

→ Quick Wins, Systems Changes and  
Moonshot Recommendations from  
the UpSurge Teams.



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# Executive Summary

UpSurge Baltimore launched to propel Baltimore into the top tier of innovation cities by building an engine to found, support, scale and celebrate high-impact startups.

There's already significant momentum across our ecosystem, from the creation of companies at our globally recognized universities to clusters of game-changing startups in Life Sciences, Digital Health, Cybersecurity, FinTech, AdTech and ClimateTech. This year, venture funding into Baltimore is on pace to be up by 133% compared with 2020, and companies affiliated with Johns Hopkins alone (not all Baltimore-based) raised more than \$1 billion in private and public capital in FY21.

This unequivocal momentum is the result of concerted efforts of key actors. Higher education leaders, such as those at Johns Hopkins Tech Ventures and the University of Maryland's UM Ventures, who have lifted research and science as distinct local strengths. Incubators and accelerators, including the Emerging Technology Centers (ETC), bwtech@UMBC, Conscious Venture Lab, Hutch, and others, which have nurtured both startups and the broader ecosystem. Founders who serve as formal and informal mentors, reaching back to offer advice even as they blaze their own paths. And companies that invest time, talent and capital in bolstering the strength of our innovation economy.

These foundational strengths and years of collective experience have also highlighted the ways in which Baltimore differs from other tech hubs. Our startups are uniquely sensitive to the dynamics of growing and innovating in an often-underestimated, culturally and racially diverse, post-industrial city. And we firmly believe Baltimore can carve our own path to a high-velocity, thriving, diverse knowledge economy. Our vision is driven by a singular goal to become the country's first Equitech city.

## The Equitech vision

Equitech is about building an innovation economy where all belong. It recognizes diversity as a force-multiplier, and works to build on the proven benefits of diverse teams, leaders and perspectives. As the cultural framework for UpSurge, Equitech provides a lens to attract, align and support transformational startups—not a filter to exclude them. And it takes into account the pathways, policies and practices needed to ensure every member of our community can choose to participate in the tech ecosystem and all Baltimoreans have the opportunity to prosper in place.

As our vision takes hold, not only will entrepreneurs and investors around the world look to Baltimore as a launching pad for transformational companies, but more Baltimoreans will see the knowledge economy as a pathway for their own upwardly mobile futures.

We at UpSurge can't—and don't want to!—bring this vision to life alone. The UpSurge Teams engaged our community's expertise, experience and vision, prompting powerful thinking around the strategies that will best nurture, support, attract and retain entrepreneurs and startups at all stages, and from all backgrounds, here in Baltimore. This report is the product of those discussions.

## Mobilizing the community

In spring 2021, UpSurge developed a list of focused teams, based on sector (ConsumerTech, ClimateTech, etc.) and activity (inclusive entrepreneurship, investor cultivation, etc.) expertise, and issued an open call for people from all backgrounds and Equitech-related interests to volunteer their time and ideas. Applications poured in from across the Baltimore region and beyond, representing hand-raisers from tech, industry, academia and the community. From this extraordinary interest, we curated diverse teams that each incorporated a range of perspectives, ages and experiences. And, we adapted our list of teams, responding to feedback about gaps or areas we had not envisioned. By our first meeting in June, we had 18 teams comprising 210 people and countless creative ideas.

We asked the teams to consider how UpSurge should focus our work across three timeframes:

- **Quick wins**, or initiatives we can accomplish now, before the end of 2022;
- **Systems changes**, or efforts that will require more time, but can be done by the end of 2029; and
- **Moonshots**, or big ideas that could fundamentally change the Baltimore ecosystem by 2030.

After an initial kick-off, the teams met over the summer, developing recommendations for each timeframe, with support from an UpSurge program manager who helped take notes and draft ideas. By the end of the process, the teams had developed 152 recommendations that will propel the work of UpSurge and our community over the next nine years.

## What did we learn?

- Our community is passionate about the potential of Baltimore, the promise of Equitech and the power of growing connections across our ecosystem. We have a clear opportunity to harness that enthusiasm and goodwill as we build out the innovation economy.
- Building an ecosystem relies on relationships and connection, in addition to intellectual assets, investment and talent. Many teams identified collaboration structures to deepen bonds across Baltimore, including CEO roundtables, peer mentoring networks, and gatherings with industry leaders.
- There is robust activity in a variety of sectors across our city, but it is not always connected or easy to access, pointing to a need for better asset, talent, company and investment mapping and robust resource libraries that could make information and expertise widely available.
- Ecosystem growth may be constrained by our infrastructure. This is most apparent in the city's painful digital divide, but can also be seen in the limitations created by the lack of wet lab space for science-based startups.
- Our city, region and state may need to step up in new ways—in terms of both incentives and marketing—to recruit and retain founders and companies, following the leads of other successful ecosystems. In some cases, powerful incentives exist to draw companies to Baltimore, but must be presented clearly and comprehensively to compete with other ecosystems.



- Traditional approaches to recruiting and training talent are not sufficient, but Baltimore is well positioned to model a new way. This may include: better outreach through more channels; less focus on pedigree; and partnerships with employers to channel trainees directly into jobs with advancement potential.
- Investors do not always see Baltimore as a city they must scout, but the strength of our current and emerging companies warrants more attention. We have an opportunity to break down investment barriers, inspiring confidence for local and national funders in the power of Baltimore as a platform for successful companies, led by brilliant, diverse founders.
- Baltimore must tell our story better. This may include celebrating our local successes, convincing young people that tech is a viable career, and shining a bright light on the advantages of our ecosystem.

## Appreciation

One of the joys of a city like Baltimore is running into people—everywhere—who are fully invested in advancing the innovation economy. Of the 210 participants of the UpSurge Teams, there were nearly 210 different opinions on what our next steps should be. Not one of them was wrong. The UpSurge Teams experience solidified our confidence in our city, in our ecosystem, and in people who will drive Baltimore's future. We can't wait to get the work started.



# UpSurge

by the numbers

210 74 20

Team Members

Age of oldest member

Age of youngest member

2,842 152

miles: greatest distance from Baltimore for a Team member

recommendations developed

148 5,200

days between UpSurge Teams' first meeting and report release

Slack messages sent by members since mid-June

~3,600

cumulative hours spent on creating these recommendations.



# Global Recommendations & Recent Progress

In the following pages, each UpSurge Team presents its strategic priorities, highlighting key areas of focus. But as we combed through the dozens of recommendations, we found that certain themes, ideas and expressed needs echoed across multiple reports. One of them—universal access to high-speed internet—is presented as a foundational premise in the Digital Equity section. We collected other shared recommendations here, recognizing they have the potential to meaningfully advance Baltimore’s progress across sectors. And, given the high-impact nature of these priorities, we didn’t wait to get started. Through partnerships in Baltimore, and across the country, we launched initiatives in several key areas.

Following are descriptions of the Teams' global recommendations, with updates on areas where the work is already underway.

- **Momentum matters.**

- » Core to many of the Teams' recommendations is building momentum within a particular sector or across the broader ecosystem in Baltimore City. This momentum can help to capture, leverage or channel entrepreneurial energy from within our communities and beyond. Among the Teams recommendations were:
  - Creating an Innovation Institute to attract and convene entrepreneurially-minded faculty from across local colleges and universities.
  - Supporting the growth of Main Street businesses interested in scaling beyond Baltimore.
  - Developing innovation sandboxes, or playgrounds, that accelerate learning, access to data, and product validation.
  - Leveraging the existing efforts of ecosystem stakeholders (corporations, nonprofits, startups, investors, educational institutions, etc.) to extend their reach.
- » One of the ways UpSurge is building momentum to underpin these recommendations is by leaning into a significant moonshot—and the key to our near-term company attraction goals—an effort to bring 10 Equitech accelerators to Baltimore by 2025. This would position Baltimore as the national hub for Equitech startup acceleration, bringing 120 companies to Baltimore each year. This month, the Techstars Equitech Accelerator announces its first cohort of 12 companies, a dynamic group whose ideas and energy will add to the vitality of our city. And in September, Stanley Black & Decker announced that its STANLEY+Techstars Accelerator is coming to Baltimore in 2022, drawn by UpSurge and the Equitech vision. This powerful corporate commitment adds to the density, focus, and draw of the Baltimore ecosystem.

- **Incentives help.**

- » Incentives are one of the key factors founders may consider when deciding where to locate a business, and they serve as important tools for jurisdictions working to foster a sector or ecosystem (see, for example, the [Massachusetts Life Sciences Center](#) or Montgomery County's [tax credit supplement](#) for cybersecurity firms). A range of credits, grants and other incentives exist across Maryland, but Teams pointed to the fact that they are not always easy to find, understand or access—and may not be sufficient to compete with other locations. Examples of the Teams' suggestions in this area include:
  - Highlighting existing incentives and packaging them in clear and easily customizable ways across sectors.
  - Developing robust state and local investment and tax credit programs for Baltimore startups that meet certain criteria (number of employees, number of years committed to city, etc.).
  - Offering tax benefits to investors, making it more attractive to support local companies, particularly those from historically disadvantaged communities.
  - Updating incentives that are geared for traditional industries to fully engage today's tech companies.
- » Since Maryland already offers a host of incentives to recruit and retain companies, UpSurge is starting with an effort to more clearly catalog those opportunities for tech startups, working alongside key partners at the city, state, Baltimore Development Corporation and TEDCO. These efforts will also help illuminate any gaps or areas where we could focus efforts more effectively for today's tech companies and provide clearer ways to compare our ecosystem to others where startups may consider locating.

- **Map it—conveniently.**

- » One of the ways to develop a tech-for-all ecosystem is to ensure information and resources are aggregated, mapped, and easy to find. These include education and training opportunities, a common toolkit for startups (templates, NDAs, pitch-deck frameworks, etc.) and a comprehensive database of local companies that aims to promote collaboration within and across sectors. In some cases, the resources already exist and need to be pulled together; in other cases, they will need to be created. Among the Teams' suggestions in this area are:
  - Centralizing knowledge-economy training programs in an easy-to-access portal that supports the local workforce, from youth to adults, and provides on-ramps into careers and networking.
  - Developing a comprehensive review of local real estate to clearly understand the needs of local tech companies and to offer long-term strategies to support them.
  - Offering specialized training and resources focused on a variety of sectors, from life sciences to data and artificial intelligence.
  - Collecting information that helps companies advance equitable and inclusive policies in day-to-day operations, as well as in hiring and retention.
- » Drawing from existing assets, UpSurge has already begun pulling together a resource bank that can serve founders at all stages of the journey from idea to IPO. Over time, we expect to build out the collection, meeting sector—and training-specific needs. In addition, later this year, we will soft launch a version of a Baltimore-specific ecosystem map that begins to aggregate local resources, in partnership with Fearless, EcoMap and others. These initiatives will help tie together our communities and ensure opportunities are easily accessible to all Baltimoreans.

- **Build the network(s).**

- » The vitality of a tech ecosystem is about far more than the strength of any of its constituent parts—it is also built on robust connections between and among them. This includes developing formal and informal networks for mentoring, fostering stronger links between startups and corporations and engaging in placemaking efforts that draw diverse communities together in new ways. Teams focused on a variety of initiatives, including:
  - Developing matchmaking services to connect startups with corporations, universities, federal agencies and labs, and other potential clients.
  - Formalizing mentorship programs for Baltimore founders, including one-on-one with seasoned entrepreneurs, peer-to-peer mentoring, coaching, CEO roundtables, sector-focused networks, and more.
  - Building out exciting and robust spaces that will help cultivate community.
  - Engaging companies in talent-development efforts, recognizing the importance of their role as potential future employers.
- » UpSurge is helping to bring Baltimore's innovators together in informal and formal ways, whether hosting the weekly Equitech Tuesdays gathering, convening groups of investors to think through better ways of connecting with local startups, or meeting with real estate innovators to consider new strategies that will allow Baltimoreans to prosper in place as their economic prospects grow.

- **Start early.**

- » The Equitech vision includes ensuring that pathways are open to every Baltimorean—starting at a young age—and that young people see appealing and viable career options within the city's innovation ecosystem. This requires expanding and deepening exposure to coding and other tech-related skills in school and through accessible extracurricular programs and paid internships. And, recognizing that "you can't be what you can't see," it also requires developing frequent opportunities to engage with startups and diverse entrepreneurs who may serve as role models for youth. Among the approaches Teams recommended were:

- Starting exposure to STEAM programs, coding and tech as early as elementary school, developing pathways for more robust and sector-specific skill development, and ensuring all Baltimore City high schools offer entrepreneurship programs.
- Establishing year-long tech-training programs that allow students to deepen career-related skills.
- Launching pitch competitions for middle and high school students to foster their entrepreneurial interests and connect them with more seasoned founders.
- Hosting community-organized demo days for Baltimore high school and college students.
- » UpSurge is working with dozens of partners focused on workforce development and broadening the pathways that will prepare Baltimoreans for the innovation economy. Some of these efforts focus on upskilling adult talent, while many consider school-aged children and how to position the next generation to enter and lead across the tech sector.

• **Spread the word about Baltimore and Equitech.**

- » As the ecosystem develops, it will be important for Baltimore to find more ways to highlight its success and its potential, both across our neighborhoods and across the country. These efforts should be designed to encourage local companies and founders (as well as those based outside of Baltimore) attract potential investors, recruit new talent or support the development of interested Baltimoreans and increase attention to the Equitech approach. Specifically, Teams suggested:
  - Scaling the Equitech message to reach broader audiences here in Baltimore and across the country, ensuring that a diverse set of messengers are fully engaged and empowered to promote and amplify the work.
  - Hosting an annual Equitech conference to galvanize energy and draw attention to the vision and the unique advantages of living, working and growing companies in Baltimore.
  - Launch showcase events around specific industries or interests, allowing Baltimore startups to share their innovations and connect with investors and corporations.
- » An unabashed cheerleader for Baltimore, UpSurge has launched social media channels to promote local founders, companies, events and ideas; borrowed the global reach of the Techstars megaphone to share the Equitech vision; and begun planning the first Equitech conference to celebrate our ecosystem and recruit new supporters to the cause.



A man with dreadlocks is shown in profile, gesturing with his hands as if in a meeting or presentation. The image is overlaid with a solid red color. The text "Recommendations by Industry Team" is centered over the image in white.

# **Recommendations by Industry Team**



# ClimateTech

## Background

Home to ClimateTech startups, global universities with innovative and aggressive climate-action plans and public-sector leaders who are committed to forward-thinking progress in the climate space, Baltimore is poised to help lead the US in creative, tech-enabled solutions to some of our society's most pressing climate challenges. We have demonstrated innovation and determination in our own Inner Harbor—see [Dynamhex's](#) goals to measure and monitor carbon dioxide reductions of F500's and utilities or [the Waterfront Partnership's plan](#) to make the Inner Harbor fishable and swimmable. Our solutions must build on local assets, including the presence of potential university and corporate partners, and on national opportunities, such as the federal government's current focus on climate change. But they must also address environmental justice—supporting historically marginalized communities that have disproportionately borne the brunt of environmental degradation—and ensure our city develops a broad and inclusive workforce that is prepared for jobs across this growing field. This UpSurge Team included founders and professionals working with new forms of clean energy and carbon capture, academic experts, and people focused on investing in and accelerating the growth of ClimateTech companies.

The following individuals served on the ClimateTech Team.

- [Claire Broido Johnson](#), Managing Director, Maryland Momentum Fund (Team Lead)
- [Grace Gahagan](#), Upper School History Teacher, The Park School (Project Manager)
- [Brian Toll](#), Director, Maryland Energy Innovation Accelerator
- [Mike Kirby](#), CEO, Lumina Solar
- [Joe James](#), Founder/President, Agri-Tech Producers LLC
- [Lynn Heller](#), Founder/CEO, The Climate Access Fund
- [Josh Goldberg](#), Co-Founder, Sunlight Financial and Co-Founder and CSO, Legends of Learning
- [Adam Van Dyke](#), Principal, Early Charm Ventures
- [Cyrus Etemad-Moghadam](#), President/Founder, RPM Tech
- [Ben Zaitchik](#), Professor of Earth & Planetary Science, Johns Hopkins University
- [Glenn Schatz](#), Chief Revenue Officer, BlocPower
- [Julia Kalloz](#), Deputy Chief of Energy, Baltimore City Department of General Services
- [Sunny Sanwar](#), CEO, Dynamhex

## Among the questions they considered:

- What is the future of ClimateTech, and how do we get ahead of it?
- How do we grow the # of participants in ClimateTech from underestimated communities?
- How can we attract large national companies with climate innovation efforts to Baltimore (partnerships, hub or HQ)?
- What infrastructure will Baltimore's ClimateTech companies need to scale?
- What role can our school system, universities and other local entities play?

## ClimateTech UpSurge Team Strategic Recommendations

### Quick Wins

- **Quick Win #1: Create a Baltimore-area university ClimateTech R&D collaboration. Encourage the city to create a federal funding collaborative to support this group to identify solutions to local climate problems.**
  - **Background:** The many Baltimore region academic institutions often do not collaborate together, and there is not a strong culture of partnering with local entrepreneurs to commercialize research results. Many institutions are responding to challenges that affect Baltimore (and countless other locations), such as stormwater management, carbon capture, circular economy, and climate adaptation technologies, but they are constrained by funding shortages.
  - **Recommendation:**
    - Coordinate resources across universities with a goal of bringing technology out of the labs to solve local problems as quickly as possible. Collaborative federal funding to Baltimore could be significantly leveraged to solve local climate change problems, supporting academics' ability to focus on local challenges.
    - Create time and space to train recent grads.
    - Create time and space to develop appropriate, well designed workforce development programs.
    - Establish entrepreneur-in-residence and founder talk series.
    - Increase collaboration with business and engineering schools for events beyond classes and research (i.e. hackathon / design sprint for ocean solutions).
  - **Who can carry this work forward?** Local colleges and universities, particularly Johns Hopkins, the University of Maryland, Baltimore, and the University of Baltimore; Civic Works; Baltimore City Office of Sustainability; UpSurge; Harbor Launch.

- **Quick Win #2: Create a ClimateTech challenge and awards program to bring energy and attention to ClimateTech companies to solve local climate change problems.**
  - **Background:** Incentivize investment in companies in Baltimore, given our variety of start ups, proximity to federal government facilities and agencies, anchor institutions, and climate change issues. This could build off of the [Exelon Climate Change Investment Initiative](#) and the [Pax Momentum fund](#), both of which support startups nationally and can serve as a model for a local program.
  - **Recommendation:**
    - Bring together partners in Baltimore to engage accelerators, an event, pitch competition and awards for Baltimore-based ClimateTech companies.
    - Incentivize investors to submit nominations, act as judges, and invest in featured companies, and more generally to consider Baltimore for opportunities.
    - Establish a local ClimateTech accelerator/incubator program, supporting a cohort of at least 10 companies each year. Once established, broadcast the success and impact of the program to elevate Baltimore’s reputation in the sector.
    - Establish wraparound services for nominated companies, including mentorship, pitch training, and other support via [MEIA](#) or other incubators like [PAX Momentum](#).
  - **Who can carry this work forward?** Exelon; Constellation; MEIA; PAX Momentum; BGE; UpSurge; local companies; Hannon Armstrong; and local colleges and universities.
  
- **Quick Win #3: Develop a ClimateTech Baltimore Committee that works with the City and local anchor institutions to apply for funding available now through the Department of Energy Loan Program.**
  - **Background:** The Department of Energy is providing loans and loan guarantees to municipalities that are finding new ways to reduce energy consumption, create more energy through renewables, and develop workforce development programs. Baltimore can tap into these and similar programs to advance ClimateTech solutions and long-term resiliency.
  - **Recommendation:**
    - Bring together a strong committee—including Baltimore City officials, university systems and entities like BlocPower and/or Posigen + Green and Healthy Homes Initiative—to collectively apply for [DOE loan funding](#) (must get credit backstop to receive DOE funding).
    - Within the application focus, include electrifying heating and cooling of multifamily properties, investing in community solar within the city, developing workforce development programs, enhancing building energy efficiency, and more.
  - **Who can carry this work forward?** City of Baltimore; University of Maryland Baltimore; BlocPower; Posigen; Green and Healthy Homes Initiative; UpSurge.

## Systems Change:

- **Systems Change #1: Building on Quick Win #1, propel university collaboration to scale climate-action plans, and encourage collaboration among universities to catalyze R&D into local and regional climate-change solutions.**
  - **Background:** Many university professors are studying climate change, climate resiliency, and climate solutions at [Johns Hopkins](#), the [University of Baltimore](#), [Loyola University Maryland](#), Morgan State, and beyond. Each college and university also has their climate-action plans for their campuses, similar to Baltimore City's [climate-action plan](#). Harness the power of this group to build sustainable solutions, create jobs, reduce brain drain, and solve urban climate change issues here and around the world.
  - **Recommendation:** Create a body that would facilitate the collaboration of Baltimore colleges/universities at scale to solve Baltimore-area climate change problems. Ideally this group could find federal and/or state funding to support this research.
  - **Who can carry this work forward?** Local colleges and universities; Baltimore City Office of Sustainability; State of Maryland; large companies with climate action plans; UpSurge.
  
- **Systems Change #2: Building on Quick Win #3, deploy the new ClimateTech Baltimore Committee to develop the shared priorities and systems needed to apply for the myriad state and federal funding resources available to support infrastructure investments that create cost savings (i.e. energy efficiency, renewable energy, water savings, grid management monitoring and controls, electrifying heating and cooling, community solar).**
  - **Background:** Baltimore City can use its borrowing capacity and/or federal government funding to invest in opportunities that create cost savings through time (i.e. that have the lowest life-cycle costs). Energy efficiency improvements, for example, can create great payoffs but do not generate revenue right away. Other cities are seizing the public funding opportunities to create jobs, decrease environmental inequity, and reduce climate change—particularly by leveraging tech-enabled solutions. The City has done \$140 MM in energy performance contracting, but opportunities exist to add additional layers of expertise to those efforts.
  - **Recommendation:**
    - Develop an inventory of every city-owned building and the current state of its energy infrastructure and efficiency, measure existing carbon dioxide emissions, and develop a roadmap for improvements and efficiencies to maximize long-term impact.
      - ▶ Create a financing and operating structure (likely through a new governing body through the Mayor's Office and the ClimateTech Baltimore Committee) that allows the city to finance and install infrastructure projects, such as replacing end-of-life HVAC systems and appliances with next-generation products that allow for managed loads within a virtual power plant. This increases efficiencies across the built environment, creates a better experience for customers, and profitably reduces anthropogenic GHGs.
    - Rely upon the above advisory council, which advises the Mayor directly and has expertise to address infrastructure challenges.
    - Work with the existing Baltimore Green Bank (Climate Access Fund) and the new national Green Banks that provide low cost capital to under-resourced communities to invest in distributed solar generation and virtual power plants.
    - Apply for federal and state infrastructure funding.
  - **Who can carry this work forward?** City of Baltimore including the Department of Planning, Office of Sustainability, Department of Finance, and Department of General Services; UpSurge; other environmentally focused partners.

- **Systems Change #3: Reduce taxes AND change zoning regulations to make it cost effective to install solar in Baltimore City, and increase the Solar Alternative Compliance Payment in Baltimore, and all of Maryland.**
  - **Background:** Baltimore City is a hard place to receive zoning approvals for solar, and its real property and utility taxes are twice the rate of anywhere else in the state (5.62% vs. 1.4-2.6% everywhere else in the state). Solar Renewable Energy Credit (SREC) pricing is not high enough to make renewables economic as set by the state's Renewable Portfolio Standard (RPS). Because the Solar Alternative Compliance Payment is \$60 in Maryland, compared with \$400/MWh in Washington, D.C., no developer will choose Maryland. We have the financing and talent framework to bring ClimateTech companies to Baltimore to install solar and community solar, but companies are not coming here because of unfavorable tax and zoning policies.
  - **Recommendation:**
    - Implement state-level changes in incentive structures like RPS, utility taxes, zoning regulations, and more to make it cost effective to install solar in Baltimore City.
    - Increase the Solar Alternative Compliance Payment throughout Maryland.
  - **Who can carry this work forward?** City of Baltimore, including Department of Planning and Revenues Collection Bureau; State of Maryland; UpSurge.
  
- **Systems Change #4: Install smart surfaces across Baltimore to slow climate change, enhance equity, and create jobs for Baltimoreans.**
  - **Background:** Baltimore City ranks among the among the worst in the US for the intensity of its urban heat island effect. Heat-absorbing traditional building materials can make urban areas feel, on average, nine degrees warmer than their surroundings. Lower income neighborhoods can be up to 10 degrees warmer than wealthy green parts of the city. An [analysis funded by the Abell Foundation](#) shows that a \$1.4 billion investment in a variety of smart services can yield \$14.5 billion in economic benefits over 30 years—10 times the initial cost. Adopting these changes would also create more than 78,000 jobs over 30 years (or 3,600 full-time jobs during the first 20 years).
  - **Recommendation:**
    - Install lighter and more reflective surfaces on roofs and/or include vegetation including trees to mitigate extreme heat which will cool the surrounding environment.
    - Create legislation that requires that all government buildings add solar rooftops. These changes can both reduce summer temperatures in Baltimore by 2.5 degrees Fahrenheit on average and 4.5 degrees in the hottest areas.
  - **Who can carry this work forward?** City of Baltimore; US government; UpSurge; philanthropic supporters; companies and coalitions focused on climate action.
  
- **Systems Change #5: Encourage the city to convert vacant lots, multifamily property roofs, and/or industrial roofs into community solar projects and ensure the City facilitates zoning for community solar.**
  - **Background:** Community solar provides lower cost energy to Baltimore residents and creates jobs in Baltimore city. Private sector can install community solar cost-effectively and can support demolition projects while investing in community solar.
  - **Recommendation:** Engage the City to zone and enable vacant lots, multi-family property units, and industrial roofs to become spaces for community solar projects. This would provide renewable energy access to low income communities so they can save on their utility bills, and create jobs. An entity like Climate Access Fund can provide a credit backstop.
  - **Who can carry this work forward?** City of Baltimore; solar developers; UpSurge; Baltimore Green Bank; real estate developers.

## Moonshots

- **Moonshot #1: With the System Changes implemented above, work to promote Baltimore as the leading city for equitable access to renewable energy and ClimateTech. Ideally, Baltimore will be implementing policies for combating climate change, while supporting environmental justice goals.**

→ **Recommendation:**

- Earn a leadership role among the C40. Building on the recommendations above, including the need for a City commitment of personnel, funding and visionary leadership, implement the full list of ideas presented in this report to establish Baltimore as a pre-eminent global leader in climate-action and climate justice.
- Earn recognition, by 2030, as the location for the most effective equitable ClimateTech accelerator/incubator programs in the world. Baltimore’s accelerators/incubators ought to be seen as a way to attract entrepreneurs from around the world. Baltimore can become the capital of equitable climate change innovation and equitable ClimateTech companies.

- **Who can carry this work forward?** City of Baltimore; State of Maryland; UpSurge; members of the ClimateTech Baltimore committee.

- **Moonshot #2: Work to ensure Baltimore is a nationwide hub for wind technology and offshore wind and increase the state's Renewable Portfolio Standard for wind.**

- **Background:** The Baltimore metropolitan area is a leading manufacturer of wind power technology, specifically in Sparrows Point. There, Tradepoint Atlantic and US Wind are building an offshore wind manufacturing center that will include 22 turbines, 17 miles, and will generate 270 MW starting in 2025. Estimates show the Sparrows Point Steel factory could employ 500 workers at capacity, and US Wind’s existing offshore project is expected to generate 1,300 construction jobs, with another 3,500 jobs estimated for the proposed second phase.

→ **Recommendation:**

- Maryland’s RPS for offshore wind is 1.2 GW, although all surrounding states have RPS requirements of 10 GW or more. Work with the state to increase the demand for offshore wind, making it more appealing for companies to build here. Work to ensure Baltimore City can offer more, good paying, working class jobs for people who build offshore wind parts.

- **Who can carry this work forward?** [Offshore Wind US](#); Orsted; US Wind; the Baltimore City Mayor’s office; State of Maryland; UpSurge.





# ConsumerTech

## Background

ConsumerTech ideas are the most widely distributed of all tech innovations—the product of envisioning how we can make our lives easier or better. Baltimore's consumer legacy includes industry giants such as McCormick & Company, Under Armour, and Procter & Gamble. Today, ConsumerTech companies offer some of the most accessible avenues to entrepreneurship, including for those founders who are not steeped in specialized technical fields, and Baltimore has the potential to make ConsumerTech a core industry.

Getting there will require young people to see the potential for their ideas and pathways through the field, greater efforts to build and engage the entire community (including those from underestimated backgrounds), and increased focus on the public and private sector funding needed to recruit startups to Baltimore and keep them here over the long term. The ConsumerTech Team included leaders of large and small companies focused on software development, interior design, retail, online engagement, legal services and wearable devices.

The following individuals served on the ConsumerTech Team.

- [LaToya Staten](#), Strategic Projects Specialist, Fearless (Team Lead)
- [Allison Wachen](#), Summer Analyst, Brown Advisory (Project Manager)
- [Shanna Tellerman](#), Founder/CEO, Mody
- [Paris Brown](#), Founder, African American Shopping Network Inc.
- [Jon Ilani](#), Administrative Fellow, Comprehensive Transplant Center at Cedars Sinai
- [Brian Razzaque](#), Founder/CEO, SocialToaster
- [Lisa Friedlander](#), Head of Marketing/Business Development, NEXT powered by Shulman Rogers
- [Paul Levine](#), Retired Retailer and Nonprofit Consultant
- [Keilah Jacques](#), Asst. Director of Academic Service-Learning, Johns Hopkins University
- [LaKisha Greenwade](#), Founder, Wearable Tech Ventures

## Among the questions they considered:

- How do we build infrastructure to commercialize these ideas and make ConsumerTech a core industry in Baltimore?
- How can we build on the presence of Under Armour, McCormick, and smaller consumer companies like Hungry Harvest to deepen the local ecosystem?
- How can we attract new ConsumerTech companies to Baltimore (partnerships, hubs or HQ)?
- Where can we exploit the natural intersections between ConsumerTech and health care, prop tech, and other sectors?
- How do we grow the # of participants in the ConsumerTech space from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Launch reverse pitch/innovation challenge.**
  - **Background:** Reverse pitch competitions are when a community or company announces a challenge and solicits innovative ideas. Particularly when focused on local challenges, the approach encourages community involvement in problem solving, empowers local leaders, helps ensure that initiatives are not duplicated, and fosters new ways to share events and opportunities locally. While competitions can have global reach—such as the [“Beyond the Bag Challenge”](#) to address plastic bag waste—Maryland has used them to address challenges closer to home through, for example, the [Maryland Business Innovation Challenge](#).
  - **Recommendation:**
    - Establish a reverse pitch competition or innovation challenge in Baltimore City, encouraging local entrepreneurs to design a solution to a Consumer Technology challenge.
    - Partner with local organizations focused on design thinking, such as MICA’s Center for Social Design, to support the challenge.
    - Share information about the opportunity broadly, particularly within underserved communities, to reach underestimated entrepreneurs and increase inclusivity.
    - Engage the media and local “celebrities” to amplify the opportunity and celebrate the winners.
  - **Who can carry this work forward?** UpSurge; ETC; Harbor Designs; Mindgrub; McCormick; Under Armour; MICA and other colleges and universities (including commercialization centers); Dent Education; churches; arts organizations.

- **Quick Win #2: Support "Bootstrapping in Baltimore".**
  - **Background:** Entrepreneurs often have brilliant ideas, but no clear sense of how to bring them to life. This program could foster a community to support bootstrapping entrepreneurs—as well as helping more people connect to other entrepreneurial opportunities locally.
  - **Recommendation:**
    - Launch an in-person, virtual and/or podcast program aimed at helping innovators who don't yet have robust financial support for their entrepreneurship journey.
      - ▶ Partner with Baltimore professionals or local business schools willing to donate time or services.
      - ▶ Develop a podcast series with wide distribution to provide advice, resources and connections to bootstrappers
        - Highlight stories of entrepreneurs who bootstrapped their way to startup success.
      - ▶ Host periodic events to gather Baltimore bootstrappers, share ideas and build community.
      - ▶ Host a branded speaker series in conjunction with the in-person events to promote "successful" Baltimore-based tech entrepreneurs and the work of UpSurge and other local entities.
  - **Who can carry this work forward?** ConsumerTech companies; philanthropic supporters; local colleges and universities; UpSurge. Note: [LaKisha Greenwade](#) offered to co-lead this initiative.
  
- **Quick Win #3: Host demo days for high school and college students focused on ConsumerTech.**
  - **Background:** [CES](#) is an annual showcase for ConsumerTech products that not only highlights some of the most exciting technological advances in the world, but also ignites the imaginations of tech builders and dreamers everywhere. Hosting smaller, local versions of this event for Baltimore-based companies and Baltimore-area students could help increase young adults' exposure to ConsumerTech problems in Baltimore, expand awareness about ConsumerTech and the potential careers within it, and generate increased interest in solving these issues.
  - **Recommendation:**
    - Host community-organized demo days focused on Consumer Technology for Baltimore high school and college students.
      - ▶ Recruit local companies to showcase their technologies at high schools and colleges, demonstrating the potential of their innovations and explaining the path required to develop them.
      - ▶ Encourage high school and college students working on their own ConsumerTech creations to participate in the showcase, soliciting feedback from professionals in the field.
      - ▶ Invite speakers to each demo-day event to promote the success of local founders.
    - Consider opening the demo days to the full community, allowing for greater exposure to and engagement with local ConsumerTech challenges from other founders and community members who might not otherwise engage.
    - Commit to several demo-day events, demonstrating a focus on long-term engagement (especially because some previous programs have occurred over short periods).
    - Consider opportunities to invite students into community-based maker spaces to allow young people to work alongside companies to develop their technologies.
  - **Who can carry this work forward?** Local incubators and accelerators with a ConsumerTech focus; Harbor Designs; Mindgrub; Under Armour; McCormick; local ConsumerTech companies of all sizes; local colleges and universities; Baltimore City Public Schools; mentoring organizations; UpSurge.

- **Quick Win #4: Launch and expand earn-while-you-learn programs in ConsumerTech.**

- **Background:** It's important to highlight Consumer Technology as a future job opportunity for young Baltimoreans, helping them understand and get involved in the field and providing easy access to skills that help them fill knowledge gaps and secure future jobs. Internship programs for students and apprenticeship programs for graduates or those without a college degree would encourage young adults to work in Baltimore and attract outside talent to these opportunities. A badge program—similar to that [offered by the University of Dallas](#)—would provide a “stamp of approval” that participants in these initiatives had received training in vital industry- and workforce-related skills.
- **Recommendation:**
  - Create paid internships and earn-while-you-learn opportunities with ConsumerTech firms based in Baltimore.
    - ▶ Address foreseeable barriers, such as ensuring students have access to necessary resources, including physical workspace, WiFi and a computer.
    - ▶ Ensure flexibility to accommodate interns’ after-school availability and apprentices without a four-year degree.
    - ▶ Recruit well known ConsumerTech companies—such as Under Armour— as a powerful draw to people within and outside of the ecosystem.
    - ▶ Consider providing academic credit.
  - For recruiting purposes, ask ConsumerTech companies to assign recruiters to certain Baltimore schools to develop pipelines of talent interested in staying in Baltimore.
  - Develop a badge program that communicates a “stamp of approval” within the Baltimore ecosystem for interns and apprentices, affirming that program participants are proficient in a specified set of skills—a system that would also mitigate the traditional overreliance on a college degree.
- **Who can carry this work forward?** Harbor Designs; Mindgrub; other Baltimore-based ConsumerTech companies; local mentor organizations; Baltimore City Public Schools; local colleges and universities; UpSurge; City of Baltimore.

## Systems Changes:

- **Systems Change #1: Create cash incentives for companies that provide paid internships and apprenticeships, and formal mentorship programs.**

- **Background:** The goal of the incentives is to support Baltimore companies in creating internships, apprenticeships or other earn-while-you-learn opportunities that encourage young talent to come to or stay in our city—in support of Quick Win #4 and our efforts to build out the ConsumerTech workforce. Providing wages for these programs would increase equity and opportunities for young talent to stay in Baltimore over the long term. Examples of relevant programs in Maryland already exist, including: The [Maryland Registered Apprenticeship Tax Credit](#), which provides businesses with \$1,000 for each eligible registered apprentice; and UMBC, whose [Maryland technology internship program](#) includes paid internships.
- **Recommendation:**
  - Advocate for state and local financial incentives for companies that participate in mentorship and apprenticeship programs, in partnership with community and corporate leaders.
    - ▶ Note, as most startups do not have tax liabilities as they launch, these should not be tax incentives.
  - Draw together a coalition of community and corporate leaders to support any necessary changes to policy or regulations.
- **Who can carry this work forward?** City of Baltimore; State of Maryland, including the Department of Labor (for apprenticeships); local colleges and universities, including their government-relations offices; Baltimore City Public Schools; local ConsumerTech companies; UpSurge.

- **Systems Change #2: Create a portal to both identify and respond to civic-related ConsumerTech needs, and support the launch of a related local hackathon.**
  - **Background:** To support Baltimore's emergence as the country's first Equitech city, the portal should tie together companies, leaders and workers in the ConsumerTech space to enable collaboration, avoid duplicative projects, create networking and mentorship opportunities and launch a periodic hackathon to respond to local challenges.
  - **Recommendation:**
    - Convene a community advisory committee comprising Baltimore-based ConsumerTech stakeholders who can advise on what resources the ecosystem needs and what challenges might best be tackled through a time-limited hackathon event.
    - Develop a portal that ties together current and potential founders, employees and investors in local ConsumerTech communities, offering an easy-to-access window into Baltimore's companies, resources and opportunities.
    - Launch a periodic hackathon that takes on local challenges, in partnership with [HACK Baltimore](#), [HopHacks](#), [Hack UMBC](#) and other local entities.
      - ▶ Consider connecting the hackathon to Quick Win #1, the reverse pitch competition/innovation challenge.
  - **Who can carry this work forward?** Local colleges and universities; HACK Baltimore (including its sponsors, such as Fearless and the Cordish Companies); ConsumerTech companies, founders and workers; UpSurge; City of Baltimore.
  
- **Systems Change #3: Launch a Baltimore-based ConsumerTech incubator to invest in, develop, support, and help drive the success of companies locally.**
  - **Background:** UpSurge has articulated the vision of launching as many as 10 Equitech-focused accelerators in Baltimore over the next several years. One or more of those should be focused on ConsumerTech.
  - **Recommendation:**
    - Recruit a corporation with a ConsumerTech focus or ties to sponsor a Baltimore-based accelerator, ideally through a partnership with Techstars, which is helping to run other UpSurge-related accelerators in Baltimore.
      - ▶ Recruit 10-12 ConsumerTech startups to launch in Baltimore.
      - ▶ Amplify the startups' potential national impact—and the importance of their growth in Baltimore—through community partners with national reach, such as Under Armour, the Ravens, the Orioles, McCormick and others.
  - **Who can carry this work forward?** UpSurge; Techstars; large consumer-focused corporations; large Baltimore-based organizations (to carry the message); ConsumerTech companies of all sizes.
  
- **Systems Change #4: Launch the nation's first Equitech conference in Baltimore.**
  - **Background:** The conference's goal would be to draw attention to Baltimore as a technology hub and establish it as a leader in Consumer Technology.
  - **Recommendation:**
    - Partner with a person or organization prepared to spearhead the initiative, coordinate the conference and garner support to market the conference, with particular outreach to underestimated founders and communities.
    - Engage Baltimore businesses and entrepreneurs in planning the conference and market heavily to them to ensure their participation.
    - Seek sponsorships from local businesses and amenities (including free or reduced-cost hotel stays) through Baltimore City and local hotels.
    - Tying in with Quick Win #3, carve out space and opportunities for youth and high school

students to learn and showcase at the conference.

- As local conferences garner attention, consider vying to host CES Tech or other ConsumerTech-related conferences in Baltimore.
- **Who can carry this work forward?** City of Baltimore; UpSurge; ConsumerTech companies; Baltimore companies (large and small); hotel chains with local presence; nationally focused ConsumerTech organizations.

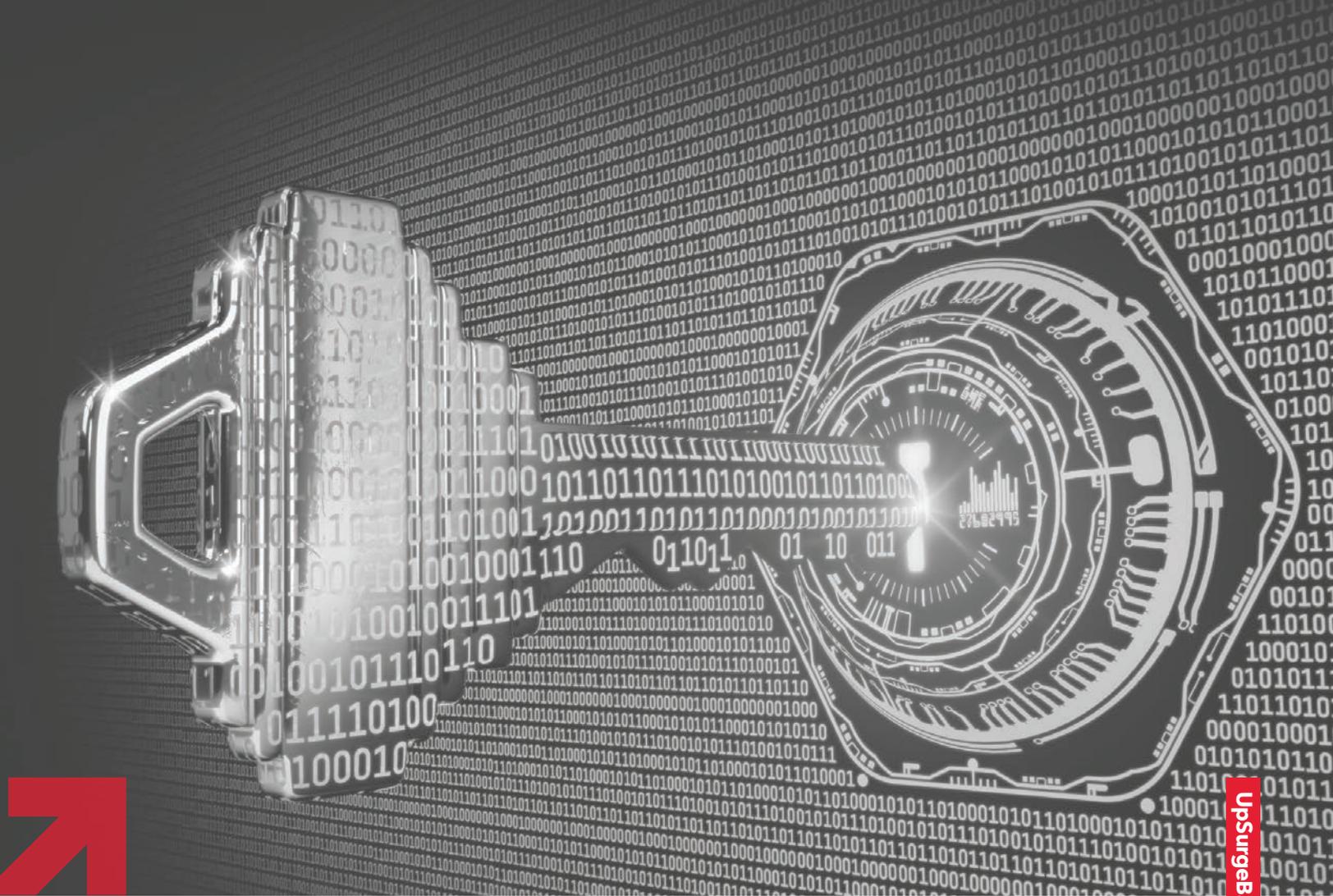
## Moonshots:

### • Moonshot #1: Establish Baltimore as a leading city for top diverse tech talent.

- **Background:** As Baltimore achieves the status of “tech hub,” it will be easier for ConsumerTech companies (and others) to attract and retain talent. Our city will also increase the number of startups founded locally, and convince companies and founders to grow here, rather than moving to a different location.
- **Recommendation:**
  - Expand Venture for America’s presence in Baltimore. Ideally, young entrepreneurs would work at Baltimore startups and remain committed to the local ecosystem.
    - ▶ Provide participants with incentives for choosing to work in a Baltimore startup.
  - Market Baltimore as a hub for tech talent through a public-relations campaign highlighting Baltimore’s ConsumerTech success stories.
    - ▶ Stories, press releases and other materials could focus on how Baltimore has supported and shaped local startups.
  - Partner with local and national tech incubators and accelerators; venture capitalists; media; ConsumerTech companies (large and small) and other partners to share information about Baltimore’s talent, helping others see the potential of our local workforce.
- **Who can carry this work forward?** ConsumerTech companies in Baltimore; Venture for America; local colleges and universities; Baltimore-based workforce training organizations; local, regional and national media and social media partners; local incubators and accelerators; UpSurge.

### • Moonshot #2: Work with the City of Baltimore and the Maryland legislature to change Baltimore taxes and incentives to make them more attractive to investors.

- **Background:** Recent changes to Maryland’s sales tax and the Angel Investors tax credit elimination have made Baltimore a less attractive area to investors. By creating tax benefits for investors, investors may be more likely to invest and start businesses here. Baltimore could refer to [Miami and Austin](#) as examples of how tax advantages can help transform cities into technology hubs, as well as looking at neighboring regions in Maryland, such as Montgomery County, which offers a supplemental [tax credit for cybersecurity companies](#).
- **Recommendation:**
  - Advocate at the state level for tax benefits for investors, particularly those with a focus on Baltimore City founders.
    - ▶ Educate members of the General Assembly on the importance of these changes and how they will support a thriving startup ecosystem that benefits all Baltimoreans.
    - ▶ Support efforts to educate the public on why these changes are needed, and recruit support from across Baltimore to make the case.
  - Advocate in the city for similar changes, benefitting local investors and encouraging founders to locate their companies in Baltimore.
- **Who can carry this work forward?** Local tech companies; Maryland Tech Council and other associations; Downtown Partnership of Baltimore; City of Baltimore; Baltimore representatives in the General Assembly.



# Cybersecurity

## Background

Baltimore is a top US city for cybersecurity companies, thanks to our higher-education infrastructure and position within the nation's security corridor, from Aberdeen to Northern Virginia, and proximity to the key federal agencies, research labs, companies and other anchor institutions within it. By leveraging these assets and opening the field to greater numbers of Baltimoreans from across our city, we have the ability to expand the cyber sector locally, both for homegrown companies and for companies and founders who see the tremendous advantages of being located here. The Cybersecurity Team included leaders focused on building the sector in a variety of ways—through statewide support, venture capital and university research and incubation, and through Teams at large and small cyber-focused organizations.

The following individuals served on the Cybersecurity Team.

- [Tasha Cornish](#), Executive Director, Cybersecurity Association of Maryland (Team Lead)
- [Megan Wahler](#), Director of Venture Strategy/Development, bwtech@UMBC (Team Lead)
- [Cynthia Mohamed](#), Cybersecurity Fellow, Applied Information Technologies LLC (Project Manager)
- [Justin Label](#), Founder/Managing Director, Inner Loop Capital
- [Maria Vachino](#), CEO, Cyntegra
- [Willie Sanders Jr.](#), Clinical Assoc. Professor of Computer Science, Towson University
- [Ben Vezzani](#), Staff Software Engineer, Walmart Global Tech
- [Travis Sachse](#), CFO, Think Stack

## Among the questions they considered:

- How do we build on our regional strength, spurring more talented founders to launch, grow and accelerate the cybersecurity sector in Baltimore?
- How can we attract existing cyber companies from other cities to Baltimore (partnerships, hub or HQ)?
- How do we build the cyber workforce?
- How do we grow the number of founders/workers in cyber from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Advocate for compliance with non-competes and pro-worker labor laws.**
  - **Background:** To make Baltimore a major hub for cybersecurity, we must be able to compete with other cybersecurity hubs in regards to policy and labor laws. California is currently the most desirable location for cybersecurity firms; Baltimore has the opportunity to learn from and adapt the policies and practices that state and other emerging cybersecurity hubs have put in place to bolster the industry locally.
  - **Recommendation:**
    - Form a working group to consider state and city regulations around pro-worker labor laws and compliance with non-competes.
    - Develop a clear understanding around what related and adjacent policies and practices make California—or other emerging locations—the most desirable location for cybersecurity firms.
    - Work with public officials at the city, regional and state levels as well as leaders across the cybersecurity ecosystem to enact changes in policy or practice.
    - Periodically assess Baltimore’s competitiveness compared with other leading cybersecurity regions.
  - **Who can carry this work forward?** Small and large local cybersecurity firms; City of Baltimore; UpSurge.
- **Quick Win #2: Launch an online hub that provides access and on-ramps to cybersecurity careers and networking.**
  - **Background:** The cybersecurity industry is forecasted to grow dramatically over the next several years, offering tremendous opportunities to those positioned to participate. An online hub would provide easily accessible information about the sector and related trainings. This outreach should start with youth and extend to people across Baltimore, ensuring all have access to information about the sector (generally and locally) and easy ways to participate if they choose.



- **Recommendation:**
  - Create a centralized resource hub to provide access to information about cybersecurity careers and training.
    - ▶ Include a section focused on outreach to K-12 in partnership with Baltimore City Public Schools.
    - ▶ Coordinate with local universities and training programs to provide easier access to opportunities for hands-on experience.
    - ▶ Develop a virtual meeting space for people in the industry to convene to learn more about how to adopt innovative workforce models, building on the work of Baltimore Tracks.
- **Who can carry this work forward?** UpSurge; Baltimore City Public Schools; local colleges and universities; Baltimore Tracks; Ecomap; Fearless; Cybersecurity Association of Maryland; cybersecurity workforce development organizations; and companies in the cybersecurity space.

## Systems Changes:

- **Systems Change #1: Encourage large corporations to establish tech and innovation centers locally, increasing their footprint in Maryland and adding to the local cluster of tech and cybersecurity activity.**
  - **Background:** Many large companies use innovation or research centers—such as Johnson & Johnson’s *JLABS* (including one in Washington, D.C.) and *SAP Co-Innovation Labs*—to develop new technologies and innovative approaches. These facilities can also build or deepen a corporation’s connections to a region, and provide interesting employment opportunities in the tech sector. As there are not many large companies headquartered in Baltimore, recruiting these centers is also an opportunity for the city to attract a greater corporate presence.
  - **Recommendation:**
    - Market Baltimore to large corporations that have (or are starting) innovation centers, highlighting: the Equitech vision; the city’s strengths, including the robust higher education presence and the thriving cybersecurity sector; and other successful local models, such as T. Rowe Price’s *Client Experience and Delivery Transformation Lab* and the Northrop Grumman-sponsored *CYNC at UBMC*.
    - Develop incentives for companies opening innovation or research centers in Baltimore, including tax credits, access to low-cost real estate and connections to pipelines of local talent that could help develop solutions.
  - **Who can carry this work forward?** UpSurge; City of Baltimore; Baltimore Development Corporation; Greater Baltimore Committee; local corporations.
- **Systems Change #2: Integrate cyber/IT training robustly into Baltimore City’s K-12 education system and beyond.**
  - **Background:** Baltimore students’ exposure to IT and cyber-related training varies dramatically across the school district. In some high schools, *Career and Technology Education* pathways provide rich opportunities to learn and engage in the field; in other schools, students have far less exposure. Early exposure to cyber and IT may increase children’s interest and their opportunities to gain skills and experience that could serve as an onramp to family-sustaining knowledge economy jobs.
  - **Recommendation:**
    - Expose students to cybersecurity when they are in K-12—the younger, the better.
      - ▶ Introduce coding to students as early as elementary school across the school district, whether through an expansion of Code in the Schools or the launch of new programs.
      - ▶ Expand high school CTE pathways focused on IT (including cybersecurity), giving more

students access to training and on-the-job experiences.

- Recruit local cybersecurity companies to employ current students as paid interns and recent graduates as apprentices.
- Create a central fund for training and education, maintained at the state level, to encourage underrepresented students to enroll in IT-training programs.

→ **Who can carry this work forward?** Baltimore City Public Schools; Code in the Schools; City of Baltimore; Digital Harbor Foundation; UpSurge; colleges and universities; local cybersecurity companies.

- **Systems Change #3: Expand incentives and transportation infrastructures to ensure Baltimore is the best location for tech workers to make their homes.**

→ **Background:** Baltimore has the opportunity to attract and retain cybersecurity (and other tech) talent that work for city-based companies, as well as those who commute regionally throughout the security corridor from Aberdeen to Alexandria by expanding existing incentive programs and providing more robust and efficient transportation options.

→ **Recommendation:**

- For workers employed by Baltimore tech companies, expand [“Live Near Your Work”](#) home buying incentives, encouraging workers to plant roots locally.
  - ▶ Promote the program to new and growing cybersecurity companies locally.
  - ▶ Highlight stories of tech startups that use the program to recruit employees, demonstrating that the incentive is not just for large institutions.
  - ▶ Create a pool of funding that small cybersecurity startups can tap before they reach a certain size (revenue/employee count).
- For workers employed in other parts of the region, develop current or new transportation options to make the commute easier and make Baltimore an attractive, affordable place to live.
  - ▶ Support efforts to improve rail service across Maryland and into Washington, D.C. and Northern Virginia.
  - ▶ Expand shuttle or bus services that link Baltimore to federal employment centers in Fort Meade, Columbia and elsewhere, decreasing the commute time for Baltimoreans.
  - ▶ Develop a “Work from Baltimore” campaign aimed at cybersecurity workers and companies to highlight the advantages of living in Baltimore, even when employed elsewhere.

→ **Who can carry this work forward?** City of Baltimore; State of Maryland; Live Baltimore; Visit Baltimore; Downtown Partnership of Baltimore; Baltimore Development Corporation; UpSurge; cybersecurity companies.

### **Moonshots:**

- **Moonshot #1: Create centralized programs for professionals entering the workforce, and for seasoned professionals to contribute to the cybersecurity ecosystem.**

→ **Background:** Currently, there is no centralized program available for cybersecurity professionals. It is difficult for new professionals entering the workforce to network with seasoned professionals. There are many seasoned professionals that would not mind offering their time to help mentor young professionals entering the workforce, but it is difficult to match these two audiences.

→ **Recommendation:**

- Create a cybersecurity training workforce (like the Peace Corps, but for training). This would encourage professionals to teach IT/cyber or work with the state, local government, and nonprofits to improve security postures across the ecosystem.
- Recommend new initiatives to the UMBC Training Centers, Catalyte, Arena-AI or others focused on the ecosystem.
- Create a skilled corps of volunteers to provide consultation and services to state and local government entities.

→ **Who can carry this work forward?** Cybersecurity Association of Maryland; UpSurge; local college and universities.





# Data/Artificial Intelligence

## Background

The data and AI sectors are growing at a record-setting pace; *in the first half of 2021, for example, AI fundraising hit \$38 billion*, \$2 billion more than raised in all of 2020. The Baltimore region has the assets to capitalize on this growth—successful startups, university experts and training programs and *innovative collaborations* between federal and university partners. The UpSurge Data/AI Team included startup founders and leaders using data and AI to focus on employee engagement, ecosystem mapping, enterprise sales, health outcomes, and data quality and protection, as well as a private industry investor and university faculty member.

The following individuals served on the Data/Artificial Intelligence Team.

- [Onyema Osuagwu](#), Co-Founder/CEO, BioNanoTech & Assoc. Professor, Morgan State University (Team Lead)
- Kiyah Venable, Student, Goucher College (Project Manager)
- [Karl Cadet](#), Co-Founder/CEO, Bodha.AI
- [Bill Karpovich](#), Founder, Cofactor Ventures
- [Pava LaPere](#), Founder/CEO, EcoMap Technologies
- [Tracey Halvorsen](#), Co-Founder/Chief Experience Officer, Return Solutions Inc.
- [Ahmad Namini](#), Professor of the Practice of Business Analytics, Brandeis University
- [Jerrold Jackson](#), VP/Head of Machine Learning and Data, EXOS
- [Dan Roche](#), Founder & Executive Chairman, Qualytics Inc.
- [Isaac Kinde](#), Co-Founder/VP of Technology Assessment, Thrive Detect (an Exact Sciences Company)
- [Sathish Pammi](#), Co-Founder/Chief Architect, Bodha.AI

## Among the questions they considered:

- Baltimore's Data/AI sector is growing; what does Baltimore need to establish itself as a national leader?
- Is there a sub-sector within AI where Baltimore would have a distinct competitive advantage?
- How can we build partnerships with local universities to scale our local AI infrastructure and attract hubs of global tech leaders, as they exist in a growing number of cities?
- How do we grow the # of founders/participants in Data/AI from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Aggregate ecosystem data and resources online.**
  - **Background:** In part because data and AI have become vital parts of nearly every sector, it is difficult to have a clear understanding of exactly what the ecosystem is doing, or who is doing it. A comprehensive mapping of resources—including academic programs, companies, entrepreneurs, workers, investors, training opportunities, etc.—would help to align the ecosystem, increase collaboration, avoid duplication of efforts, and identify strengths and gaps.
  - **Recommendation:**
    - Ensure existing mapping efforts have a specific focus on data and AI, or launch a new effort to aggregate information and resources.
      - ▶ Crowdfund the work to cover more ground and gain more credibility in the community.
      - ▶ Provide educational resources and opportunities to help interested Baltimoreans gain basic knowledge about data science or access to upskilling opportunities.
      - ▶ Use the data to identify strengths and gaps; celebrate and publicize the former while gathering ideas and resources to respond to the latter.
  - **Who can carry this work forward?** UpSurge; EcoMap; Johns Hopkins Center for Government Excellence; City of Baltimore; State of Maryland; local colleges and universities.

- **Quick Win #2: Host a series of in-person and virtual Data/AI networking events to build and connect the community.**
  - **Background:** Events that showcase existing companies and talent in Baltimore may help to increase collaboration (rather than competition) and pique interest in this work across the city. The events should be widely publicized and accessible to all members of our community, particularly those who don't have easy access to information about cutting-edge data and AI technologies, company formation or employment in this space.
  - **Recommendation:**
    - Develop a schedule of monthly events—virtual and in-person—that will speak to a range of local interests. These could include:
      - ▶ Panel discussions on the effects of systemic racism in AI and data;
      - ▶ A hackathon to solve a local challenge;
      - ▶ Events that showcase a variety of career pathways, allowing participants to self-select into their areas of interest;
      - ▶ A startup weekend—such as the [three-day event offered by Techstars](#)—with a data/AI focus.
  - **Who can carry this work forward?** UpSurge; local data/AI companies and leaders; City of Baltimore; local colleges, universities, incubators and accelerators; EcoMap, Bodha.ai.

## Systems Changes:

- **Systems Change #1: Create a Data Sandbox, modeled on the Massachusetts industry examples, to provide startups with data access for testing and validation.**
  - **Background:** Massachusetts organizations that help startups validate new products and services can join the Sandbox Network. Many small companies benefit from the services offered at these sandboxes through access to data and coaching to accelerate their product development. There are nine sandboxes approved under the program, providing a variety of testing and validation environments.
  - **Recommendation:**
    - Spend time with the Massachusetts program leaders to learn about the best practices for running an effective innovation sandbox.
    - Build a data sandbox for one or two sectors in Baltimore with robust startup activity.
      - ▶ Consider Digital Health and FinTech as two initial focus areas, because of robust data infrastructure and experienced partners.
    - Market the sandboxes as opportunities for companies based in Baltimore to accelerate learning and product validation.
    - Use the sandboxes as powerful company attraction tools for companies based outside Baltimore who face the high cost and/or inaccessibility of data.
  - **Who can carry this work forward?** UpSurge; Baltimore Development Corporation (or other local organizations well situated to administer the sandbox).

- **Systems Change #2: Launch a Data/AI-focused Equitech accelerator.**
  - **Background:** As Baltimore builds a cluster of Equitech accelerators, one should be specifically focused on data and AI. Accelerating 10 startups in this space each year—and recruiting many of them to stay in Baltimore—will add to the density of the landscape and draw other companies to participate.
  - **Recommendation:**
    - Recruit a corporate sponsor in a model similar to the STANLEY+Techstars accelerator launching in Baltimore in 2022.
    - Facilitate the accelerator’s launch and success by tying it deeply into existing resources, including a ready network of mentors and potential funders.
  - **Who can carry this work forward?** UpSurge; Techstars; City of Baltimore; Baltimore Development Corporation; corporations.
  
- **Systems Change #3: Democratize the collection and use of large-scale data, with help from local data scientists and Baltimore communities.**
  - **Background:** As national research, *including some from the Annie E. Casey Foundation*, has found, data analytics are a practically inextricable part of countless business and government operations. But the use of big data in decision making—such as whether to extend a loan or how to assess a property—can be controversial. The more Baltimoreans know about how data is collected and used, the more they will be able to fight against related inequities, and find new ways to make big data work better for all.
  - **Recommendation:**
    - Develop and promote opportunities for people across Baltimore to learn about how data is generated and the ways in which it is used in business and government operations.
    - Highlight research pointing to the most equitable uses of data and to the founders, companies and leaders that are working within—or outside of— existing systems to ensure its equitable use.
    - Encourage more Baltimoreans who are concerned about equitable uses of data to consider careers in data science and AI.
      - ▶ Provide accessible pathways to those careers through local colleges and universities, workforce development programs and upskilling opportunities.
  - **Who can carry this work forward?** UpSurge; local data/AI companies and leaders; local colleges and universities; neighborhood associations; Baltimore City Public Schools; City of Baltimore, including the Mayor’s Office of Performance and Innovation.

## Moonshots:

- **Moonshot #1: Make Maryland the leading force in quantum science and engineering.**
  - **Background:** With leadership from the University of Maryland, and an interdisciplinary alliance of academia, industry and government agencies and centers, the DMV region has emerged as a force in quantum research. After IonQ debuted on Wall Street—the first quantum computer company to do so—UMD’s president praised the company born of research conducted at his university, and declared *“the quantum revolution ... has arrived.”* The Baltimore region has the chance to seize on this revolution and build out the resources needed to solidify Maryland as the quantum capital of the US.

→ **Recommendation:**

- Bolster the long-standing efforts at UMD by recruiting quantum experts to Maryland universities.
- Expand partnerships such as IBM Quantum that aim to help build a more diverse community of quantum researchers, developers and companies through HBCUs and other channels.
  - ▶ Offer quantum-focused graduates incentives to stay local.
- Work with Baltimore City Public Schools to begin introducing quantum science and engineering to high school students as they study related fields, sparking interest in the potential opportunities.
- Broaden the reach of facilities such as UMD’s Quantum Startup Foundry that nurture quantum-focused entrepreneurs—or launch an Equitech accelerator focused specifically on quantum.

→ **Who can carry this work forward?** University of Maryland, including the Quantum Startup Foundry and the Joint Quantum Institute; UpSurge; Johns Hopkins Applied Physics Laboratory; Morgan State University; Coppin State University; area quantum companies, including IonQ.





# Digital Health

## Background

Home to world-class academic medical research institutions, in addition to some of the largest federal agencies supporting healthcare, Baltimore is well positioned to serve as the East Coast hub of digital health. The significant medical and life sciences communities here have widely adopted electronic medical records across a range of medical practice settings, creating an enormous amount of digital information. Maturing big data analytics, artificial intelligence and clinical decision support tools allow for new, rapid insights from text, data, and images spanning petabytes of data. As data in healthcare grows in variety and speed, healthcare institutions are racing to transform the experience for consumers, providing new kinds of access to health data and to personalized care. Baltimore offers a robust infrastructure of care, with institutions driving collaborative partnerships to reimagine care beyond the hospital setting. These assets position our city uniquely as a leader in the digital transformation of healthcare, on the cusp of a national revolution in digital health and precision medicine. Members of this UpSurge Team included university officials, entrepreneurs, accelerator leaders, hospital executives and digital health association leaders.

The following individuals served on the Digital Health Team:

- [Kristen Valdes](#), Founder/CEO, b.well Connected Health (Team Lead)
- [Jeané Baker](#), Recruiter, Adecco (Project Manager)
- [Adler Archer](#), CEO, Adloris Ltd.
- [Ellington West](#), CEO, Sonavi Labs Inc.
- [Aaron Reichel](#), Social Worker/Social Entrepreneur, Breakthrough Counseling and Consulting
- [Brian Spray](#), Director of IT Services, UC Davis
- [Galen Shi](#), Founder/Managing Director, WeGo Foundation
- [Anna Millhiser](#), VP of Hospital Solutions and Client Success, Doximity
- [Mark Komisky](#), Program Director of Chesapeake Digital Health Exchange, Johns Hopkins University
- [Simon C. Mathews](#), MD, Chief Medical Officer/Asst. Professor, Vivante Health/Johns Hopkins Medicine
- [Emily Durfee](#), Healthworx Hub Manager, Healthworx
- [Kevin Keenahan](#), Co-Founder/CEO, Tissue Analytics Inc.
- [Brian Hasselfeld](#), Medical Director of Digital Health, Johns Hopkins Medicine

## Among the questions they considered:

- Digital health is a rapidly growing area of strength in Baltimore. How do we attract the customers, talent and capital to help existing companies scale?
- Are there sub-sectors of digital health that can be nurtured to make Baltimore the go-to place to launch and grow?
- What role can our hospitals, universities and other local entities play?
- How do we grow the # of participants in Digital Health from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Take inventory of companies in the digital health space present in Baltimore to create a digital health marketplace.**
  - **Background:** A single place for all digital health products and entrepreneurs would help with connections and match-making. The marketplace can connect people to advisory boards, entrepreneurs to digital health companies, office hours (open for 30/60 companies) where anyone can sign up, and support the general startup founders and startup community.
  - **Recommendation:**
    - Create a platform—or use a platform that has already been established—to connect stakeholders in the digital health space.
    - Enable clinical experts to help tech experts understand top priorities and needs of the medical community vs things being invented that are helpful, but not a top priority for institutions.
  - **Who can carry this work forward?** Companies; Baltimore hospitals; EcoMap; UpSurge; colleges and universities.

- **Quick Win #2: Create a common bank of information/toolkit for startups.**
  - **Background:** Many early stage companies would benefit from easy and affordable access to frequently needed documents, like company formation, tax documents, templates, NDAs, pitch deck frameworks, etc.
  - **Recommendation:**
    - Create a bank of information/toolkit for startups and startup leaders with materials like standard documents, compensation strategies, product validation frameworks, and legal documents.
    - Collaborate with digital health startups to survey and assess the early needs of companies. Determine the gold standard of documents by reaching out to incubators, accelerators, and venture studios, and compile these materials into the toolkit.
      - ▶ Things to include in this toolkit could be: compensation strategies, employee growth plans, frameworks to validate if their products are scalable, pitch deck best practices, pitch best practices, etc.
    - Disseminate the toolkit widely to accelerators, incubators, and other spaces where early stage companies reside.
  - **Who can carry this work forward?** UpSurge; local startups; local incubators and accelerators; TEDCO.
  
- **Quick Win #3: Broaden educational pathways and access.**
  - **Background:** To better support the ecosystem, provide access to training and skill building programs that don't require a degree. This work will help create a thriving ecosystem for underrepresented and underserved communities that are able to access skills and opportunities they traditionally do not have access to.
  - **Recommendation:**
    - Work with universities, buyers, and companies to provide grants or scholarships for education pathways.
    - Work with larger companies to create a pool of funding that companies can access to help gain exposure.
    - Ensure educational pathways established include nontraditional options that don't require degrees.
  - **Who can carry this work forward?** Large healthcare organizations; local startups; UpSurge; philanthropic supporters.

## Systems Changes

- **System Change #1: Develop a talent development program for digital health that trains individuals in skill sets needed by Baltimore digital health companies, and matches employees to potential employers.**
  - **Background:** Digital health companies are leaving Baltimore due to the challenges of recruiting and retaining talent. Locally, tech companies are competing with government contractors who pay higher rates to get the top talent from schools and universities. Additionally colleges and universities are training "generalists", rather than specialists with technical, hard skills. This forces digital health companies to consider sources of talent in other areas of the country, or even relocate from Baltimore.

- **Recommendation:**
    - Expand models similar to [Catalyte](#) across Baltimore to include more skillsets that are needed by digital health companies, and make it more available to the digital health industry in the city.
    - As individuals graduate from the program, match them to companies in Baltimore. This model helps diversity and inclusion efforts and builds local talent.
    - Engage experts who understand HIPAA liabilities and who can help set up the right environments for training.
  - **Who can carry this work forward** Catalyte; workforce development organizations; digital health companies; UpSurge.
- **Systems Change #2: Create an innovation sandbox where systems and payers provide access to environments with data that companies can use to develop and test products**
    - **Background:** Digital health companies often struggle with implementations and planned outcomes because they have no real-world tangible access to environments where they can apply and refine their solutions. Working with real data will accelerate ideas to market, spawn new companies at a faster rate, and shorten the sales cycles as companies demonstrate effective integration and can show anticipated identification targets and solutions.
    - **Recommendation:** Create an innovation playground where health systems and payers can share de-identified data and API access with digital health companies.
    - **Who can carry this work forward?** Health systems payers; university health organizations; other players; UpSurge; digital health companies.
  - **Systems Change #3: Create a pool of funds for pilot programs and a commitment from local corporations to participate in proof-of-concept pilots for Baltimore-based digital health companies.**
    - **Background:** Lots of doctors inside health systems are willing to do the work to pilot new programs and demonstrate efficacy. The number one challenge is then “...who is going to pay for this?” This prevents speed to market for digital health companies even when they have a willing partner.
    - **Recommendation:**
      - Raise a pool of money from family offices, VCs, and strategic investors—including health systems and payers—that can be used to fund pilots or initial contract timelines where a digital health company and provider/payer agree on work to test a product in market or bring it to market quickly outside of a budget period.
      - Allow those committing to a certain number of pilots per year with Baltimore-based digital health companies to apply to utilize funds from this pool for the pilot.
      - Require participants to write up findings, failures, reasons, successes, move to contract, etc.
    - **Who can carry this work forward?** UpSurge; venture investors; TEDCO; State of Maryland; large healthcare organizations; local companies.

## Moonshots:

- **Moonshot #1: Building on the successes of the Quick Wins and Systems Change recommendations, create a Digital Health Innovation District that helps cement Baltimore's place as the premier location for any company launching a digital health service.**

→ **Background:** This moonshot is designed to accomplish the goal of making Baltimore the premier location for any company launching a digital health service. This requires supporting companies from ideation through profitability and potentially exit via M&A or IPO. To differentiate Baltimore from other areas of the country, we must provide an environment that can accomplish the following:

- Support companies with shared services to reduce burnout and increase the chances of sustainability.
- Provide an innovation playground to support companies with the development of products using real world data and integrations and to demo production environments.
- Establish a population (uniquely Baltimore) that is willing to try solutions, provide feedback and support companies with publishing early outcomes and findings.
- Shorten the sales cycle timelines and grow revenues faster than the average.
- Provide access to capital through all phases of a company's lifecycle.
- Reduce time spent on administrative tasks to keep companies focused on their mission by surrounding them with support.

→ **Recommendation:**

- Establish the Baltimore Digital Health Innovation District. This would be a dedicated location specifically targeting startups and the companies that serve them.
  - ▶ The innovation district would be a physical district in Baltimore where startups could gain inexpensive access to space that supports all stages of a business (co-working, collaboration space, small desk/area rentals, single floors, multiple floors, etc.) This makes it easier for companies to build and retain talent without spending time and money on moving, leases, etc. Offices would also be available for companies that support startups in fractional models to hold office hours or full residence. This list includes CFO, legal, branding/marketing, swag/print (conference materials), staffing agency (reduced fees), university presence for career fairs and internships, etc. Experts from HHS, CMS, ONC, OIG, FDA and other local regulatory bodies could present/have office hours.
  - ▶ Baltimore is full of innovative players and academic medical institutions who can provide sandbox environments to entrepreneurs with de-identified but real world data and core systems integration environments. Innovation departments from all systems and payers could maintain offices in the district, hold office hours, and hear pitches from the resident companies.
  - ▶ Baltimore offers a unique population makeup. Many say that if you can build a solution that serves the Baltimore community, it will scale anywhere in the country. Curating a list of volunteers to represent all demographics supports the UpSurge vision and empowers startup companies with a test bed to refine and enhance their product offerings to be inclusive and diverse from inception.
  - ▶ Ask our institutions and foundations to provide support to the District companies in multiple ways; first, commit to an annual financial investment to a pool that funds pilots and early implementations for District companies (see System Changes recommendation); second, agree to work on a "Common App" for digital health NDAs, pilot agreements and enterprise contracts; third, commit to doing a certain number of pilots and implementations per year.
  - ▶ Build a true angel and early investment group that meets in the District and supports regular pitch events by District companies. Make these social events not-to-be-missed with catering by local restaurants and beverage makers to encourage connections and to provide a short pitch event monthly. Build partnerships with both strategic investment funds and traditional VCs who will commit to attending (virtually or in-person) the monthly events. Maintain a directory of all companies affiliated with a clear description of what

stage, amounts, and metrics they require for investment. Don't waste companies' time, and enable startups to focus on pitching to relevant companies. Allow buyers to attend, and keep events free of service providers trying to sell to startups.

- ▶ Build an online founder community chock full of resources on things all companies need to do (legal docs, compensation planning/strategies, introduction requests, board makeup, sample pitch decks, etc.) and a founder Slack channel to reach out for questions/ advice. District companies should be able to time-hack the administrative items through community collaboration and stay focused on their core mission.
- ▶ Make this the District to hold all visibility events (customers), social meetups, hackathons and pitch competitions.

→ **Supporting Materials:** [Chainnovate.com](http://Chainnovate.com)

→ **UpSurge Teams to Engage/Impacted:** City of Baltimore; State of Maryland; real estate developers; anchor digital health companies; UpSurge; local colleges and universities; companies; health systems; data science companies.





# Food & FoodTech

## Background

Baltimore is the longtime home to McCormick, one of the country's *most prominent FoodTech* giants, and the city has nurtured startups, like *OrderUp*, to successful exits. As the industry grows, Baltimore is poised to leverage its strengths—including its premiere location, the presence of large and small FoodTech innovators and a booming restaurant scene—to emerge as the leading location for the sector. The FoodTech Team included leaders of innovative local startups focused on eliminating food waste, cutting food-delivery fees, supporting industry growth and delivering healthy and multicultural groceries and meals; as well as leaders in the investment and talent development spaces.

The following individuals served on the FoodTech Team.

- [Kathleen Overman](#), Director of Connection, Cureate (Team Lead)
- [Kyree Jones](#), Event/Booking Specialist, Visit.org (Project Manager)
- [Evan Lutz](#), CEO/Co-Founder, Hungry Harvest
- [Carlos Bello](#), Venture Associate, Squadra Ventures
- [Jal Irani](#), Co-Founder, Flave
- [Derek Battle](#), Co-Founder, Flave
- [Emily Miller](#), Co-Founder, Everdura
- [Ellis McCue](#), CEO, Territory Foods
- [Karina Mandell](#), Staffing Manager, Catalyte
- [Maxwell Wieder](#), Counter Intuitive Cooking

## Among the questions they considered:

- What infrastructure will Baltimore's Food & FoodTech companies need to scale?
- How can we capitalize on the presence of McCormick, Giant Food, H&S, and other large food companies to help accelerate the ecosystem?
- How do we attract Food & FoodTech companies to Baltimore (partnerships, hub or HQ)?
- What is the role of food incubators and ghost kitchens in our FoodTech economy?
- What is the future of Food & FoodTech, and how do we get ahead of it?
- How do we grow the # of participants in Food & FoodTech from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Launch spotlight/buying programs through which large Baltimore-area companies would agree to highlight and/or buy from local consumer packaged goods (CPG) companies and restaurants looking to scale.**
  - **Background:** Large organizations have the opportunity to contribute to the food economy in Baltimore, leveraging their size, position and market reach to support startups' growth and development. Existing initiatives—including [Cureate's efforts to design and implement "buy local" programs](#) for anchor institutions such as the University of Maryland Medical Center and the Baltimore Convention Center—may serve as models for connections across the ecosystem.
  - **Recommendation:**
    - Connect large and small companies to accelerate the growth of food entrepreneurs in Baltimore.
    - Launch or expand local spotlight/buying programs.
    - Host food entrepreneurs on-site for tastings, workshops, etc.
    - Develop marketing campaigns to promote successful buying programs, drawing attention to CPG companies and to the corporation's local commitment.
  - **Who can carry this work forward?** Baltimore-area corporations (McCormick, Orioles, Ravens, the Maryland Aviation Administration, etc.); colleges and universities; Cureate; UpSurge; local CPG companies; Baltimore Development Corporation.



- **Quick Win #2: Develop a peer-to-peer/mentoring networking event and coaching program for consumer packaged goods (CPG) companies and restaurants looking to scale.**
  - **Background:** Access to institutional knowledge and social capital is crucial to equitable business growth and to fostering an inclusive, supportive FoodTech community in Baltimore.
  - **Recommendation:**
    - Build out opportunities for CPG startups to receive advice from relevant local experts, bolstering Baltimore’s FoodTech community.
    - Develop a roster of volunteer mentors and coaches from later stage CPG companies, large area corporations and individuals with domain and functional expertise.
    - Launch a “speed-coaching” and networking event to provide quick connections and immediate answers to business growth needs.
    - Build a longer-term mentorship program through which domain and functional experts (marketing, HR, operations) can help small companies grow within and beyond Baltimore.
  - **Who can carry this work forward?** UpSurge; Baltimore-area companies, colleges and universities; local CPG companies.
  
- **Quick Win #3: Expand Baltimore Restaurant Week promotions to highlight and support local FoodTech companies.**
  - **Background:** [Baltimore Restaurant Week](#) provides an annual opportunity to discover and try dine-in city restaurants at a discount. The promotion is heavily marketed to a wide audience throughout the region. Consider broadening the scope of the 10-day event to provide information about local FoodTech companies and educate the region about this growing segment of our ecosystem. Create opportunities that allow non-traditional restaurants, food experience providers, and food product vendors to partake in Restaurant Week or something similar.
  - **Recommendation:**
    - Work with the Downtown Partnership and Visit Baltimore to carve out opportunities to highlight local FoodTech companies. Launch or expand local spotlight/buying programs.
    - Feature FoodTech startups in marketing and promotional materials for Baltimore Restaurant Week.
    - Pitch the media on using Baltimore Restaurant Week as a chance to consider the Baltimore food scene more broadly, including focusing on FoodTech companies, their role in the ecosystem (e.g., partnerships with local corporations) and why Baltimore is a good spot for FoodTech founders.
    - Consider an open showcase event during Baltimore Restaurant Week at which FoodTech startups and places that don’t offer typical dine-in experiences could highlight their products and ideas.
  - **Who can carry this work forward?** Downtown Partnership; Visit Baltimore; UpSurge; FoodTech companies; large corporations; Cureate; City of Baltimore.

## Systems Changes:

- **Systems Change #1: Host a bi-annual educational program for CPG entrepreneurs.**
  - **Background:** Startups benefit from easy access to industry knowledge, social capital, and examples of how others in the sector have grown and built their businesses. Other FoodTech conferences (such as [Future Food Tech](#)) are broad events aimed at people across the industry; this program could be aimed at startups specifically interested in how best to scale and expand their operations.

- **Recommendation:**
    - Host a bi-annual education program for CPGs aimed at helping early-stage food entrepreneurs from Baltimore and around the country learn, grow and begin to carve a spot within the national FoodTech landscape.
      - ▶ Organize the program remotely or as an intensive, in-person experience. Existing courses, such as those run by Cureate, may serve as potential models or starting points.
    - Develop tracks to support entrepreneurs at different stages of their journey. For example:
      - ▶ Level 1: “You may know how to make your product, but you might not know how to run a business. How should you think about expanding your reach.”
      - ▶ Level 2: “You’ve reached saturation in the city and state. How should you think about expanding beyond the city?”
    - End the program with a funding competition or “speed-coaching” session, which would provide opportunities to build business relationships in areas of need, such as real estate, production, sourcing, marketing support, web design, etc.
    - Recruit FoodTech companies from across the country, allowing Baltimore to demonstrate what it offers growing businesses.
  - **Who can carry this work forward?** UpSurge; local and national FoodTech companies; local corporations; Visit Baltimore; Cureate; local accelerators and incubators.
- **Systems Change #2: Create incentives for mid-sized CPG business to stay and grow in Baltimore.**
    - **Background:** Many cities offer incentives to attract large-scale businesses, like Amazon, recognizing the potential financial and employment benefits those companies bring. Consider offering perks to mid-sized CPG companies to build production facilities in Baltimore and incentivizing such businesses to stay in our city.
    - **Recommendation:**
      - Develop and promote packaged incentives for growth-stage CPG/FoodTech businesses to build their production facilities in Baltimore. Stipulations might include:
        - ▶ Committing to a certain number of years of growth in Baltimore City.
        - ▶ Hiring a certain number or percentage of positions from within Baltimore City.
        - ▶ Providing or contributing to programs that provide job training opportunities for Baltimoreans.
    - **Who can carry this work forward?** City of Baltimore; Baltimore Development Corporation; Maryland; Department of Commerce; UpSurge; Live Baltimore; Downtown Partnership of Baltimore; local FoodTech companies.
  - **Systems Change #3: Promote Baltimore and the DMV region as the leading location for FoodTech and CPG companies in the nation.**
    - **Background:** With a burgeoning restaurant scene, large corporations engaged in the FoodTech landscape and a host of dynamic FoodTech companies growing locally, the city has the opportunity to appeal to greater numbers of entrepreneurs, restaurateurs and consumers as a central point in the DMV.
    - **Recommendation:**
      - Differentiate and promote the strengths of Baltimore and the region, making the case that our city is the place for FoodTech entrepreneurs to make their home.
      - Research how other cities carved their niche—for example, Columbus, Ohio’s reputation as a [test-market for new food products](#). Analyze what market structures or policies made the location appealing, how Baltimore stacks up against competitor cities, and what allows us to stand out.

- Brand Baltimore and the DMV to differentiate it from other markets, highlighting strengths such as location, affordability and the Equitech vision.
  - Host opportunities for FoodTech entrepreneurs—particularly those from underestimated backgrounds—to visit Baltimore, connect with companies across the ecosystem and consider locating here.
- **Who can carry this work forward?** UpSurge; local FoodTech companies; McCormick and other large corporations; Visit Baltimore; Baltimore Development Corporation; City of Baltimore.

**Moonshots:**

• **Moonshot #1: Create a seamless ecosystem to facilitate the launch and growth of food and FoodTech companies in Baltimore.**

- **Background:** To be known as the best place for food and FoodTech companies in the country, Baltimore will need to appeal to a range of industry entrepreneurs, leaders, workers and consumers. Creating a deliberately integrated ecosystem that ties all strands of the industry together would leverage Baltimore’s powerful strengths—including one of the East Coast’s largest ports, a robust international trade infrastructure, industrial resources for manufacturing at scale, and a diverse, innovative workforce—to propel our global reputation in this area.
- **Recommendation:**
  - Create a deliberately integrated ecosystem that ties together all strands of the food and FoodTech industry, based on the success of the Silicon Valley tech campus structure. Include consumer packaged goods production facilities, central processing facilities, a packaging facility, food-service and FoodTech education, restaurant-based services, commercial kitchen space, food trucks, and other infrastructure necessary for FoodTech companies to grow.
  - Support a well-executed, vertically integrated, regionally based food ecosystem with particular focus on the city’s Equitech vision, equitable economic development, long-term sustainability and robust youth participation.
  - Develop and launch accelerator programs for specific aspects of the FoodTech industry, such as packaging, consumer goods, etc. Recruit companies from around the world to participate, and help them stay and grow in Baltimore.
  - Host a regular summit, both to facilitate connections across the ecosystem and beyond and to draw attention to Baltimore’s emerging role as a national leader.
- **Who can carry this work forward?** City of Baltimore, including the Mayor’s Office and the Baltimore City Food Policy Initiative; UpSurge; Baltimore Development Corporation; TEDCO; National Restaurant Association; Maryland Restaurant Association; F3 Tech; Cureate; Counter Intuitive Technology; local food and FoodTech companies.





# Life Sciences

## Background

Baltimore City has long been a hub of research in the life sciences—research that has led to breakthroughs in preventing, lessening, or curing countless medical conditions—and the industry remains an anchor in the city's economy today. Our region benefits from unparalleled access to federal resources, world class universities with focuses on life sciences, and an ecosystem of public and private assets ready to assist scientists and innovators. The city is home to two world-leading bioparks and numerous high-tech companies, and it has been named a top-five startup city for its culture of creativity and scientific dynamism. Baltimore's explosive growth in the life sciences builds on the reputations of Johns Hopkins University (#1 recipient of federal R&D dollars) and the University of Maryland, Baltimore, and their abilities to found, attract, and grow biotechnology companies across a spectrum that includes digital health, medical devices, diagnostics, genomics, therapeutics, manufacturing and more. All of these companies benefit from their proximity to major Maryland-based government agencies, such as the National Institutes of Health and Food and Drug Administration. Maryland itself includes most of the BioHealth Capital Region, which ranks in the top four life science hubs in the country. Thinking through the opportunities in this vital sector required a diverse Team of professionals from our leading universities; life sciences startups; training programs; and global life sciences companies.

The following individuals served on the Life Sciences Team.

- [Mary Morris](#), Director of the Baltimore Fund, University of Maryland, Baltimore (Team Lead)
- [Will Richardson](#), Analyst, Point Field Partners (Project Manager)
- [Adam Kronk](#), Principal, New Ventures, University of Maryland, Baltimore
- [Timothy Fawcett](#), Scientific Director, Btiworks
- [Chandra Ramanathan](#), Global Head of R&D Open Innovation, Bayer
- [Kimberly Noonan](#), Founder/CSO, WindMIL Therapeutics
- [Nao Gamo](#), Co-Founder/CEO, NeuroSonics Medical
- [Justin Hanes](#), Founder, Theraly Diabetes Inc.
- [Helen Montag](#), Senior Director for Ecosystem Development, Johns Hopkins Technology Ventures
- Darryl Carter, Co-Founder/Chief Scientific Officer, Otter Immono-Oncology
- [Carole Burns](#), Director of Translational/Asset Development, GEN1E Life Sciences Inc.

## Among the questions they considered:

- Life sciences is an anchor of the local innovation economy. What infrastructure is needed to maintain the strength of the sector? What could help us accelerate dramatically?
- Are there sub-sectors in life sciences where we have a distinct advantage that we should lean into with exceptional resources to become the go-to city?
- How can we increase the number of entrepreneur-scientists to mirror the ecosystems in Boston and/or San Francisco?
- How can we attract large national life sciences companies to Baltimore (partnerships, hubs or HQ)?
- How do we grow the # of founders and participants in Life Sciences from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Develop and expand small-footprint, shared wet lab space in Baltimore City.**
  - **Background:** Data shows an extraordinarily [low vacancy rate for wet lab space in Maryland](#), but new facilities are extremely expensive to build and maintain. Shared spaces could provide the critical infrastructure needed for early-stage startups, while reducing direct costs for each company and supporting developers' investments. Baltimore has experience in this arena: recently, the [Columbus Center](#) transformed two existing office spaces into small labs to house two emerging companies; and Sinai allocated empty labs into an [incubator facility](#) that now houses multiple early-stage startups. These types of opportunities can help fill immediate needs for growing companies.
  - **Recommendation:**
    - Secure spaces and resources to establish more wet lab space for life sciences and research startups, many of which will come from regional universities.
      - ▶ Engage universities and colleges as financial and thought partners in this initiative, alongside private developers, government, and foundations.
    - Leverage BDC's effort to explore the use of existing space by subdividing large established spaces for smaller companies or transforming existing buildings into usable lab space.
  - **Who can carry this work forward?** University of Maryland; Baltimore; Johns Hopkins University, particularly through Johns Hopkins Tech Ventures; Baltimore Development Corporation; UpSurge; real estate developers; Institute of Marine and Environmental Technology.

- **Quick Win #2: Launch a sidecar fund or funds to invest in life sciences.**
  - **Background:** There is a dearth of venture capital in Baltimore, although opportunities to invest in life science companies are abundant. Because capital is necessary for companies to scale, they often must look to other cities/regions for funding. Creating a sidecar fund that exclusively invests in life sciences companies will serve as another support for the local ecosystem.
  - **Recommendation:**
    - Work with family offices, foundations and other interested investors to inform them of the opportunities and encourage their engagement in sidecar funds.
      - ▶ Consider sidecars managed by established local venture firms (e.g., Catalio, Rock Springs, Epidarex, Conscious Venture, etc.).
      - ▶ Partner with two or three investor groups to create new sidecar funds focused on life sciences companies with a specific Equitech focus.
      - ▶ Deploy respected partners in the ecosystem (e.g., leaders at Brown Advisory, Point Field Partners, Greenspring Associates, etc.) to get money off the sidelines to support the funds.
  - **Who can carry this work forward?** UpSurge; local venture firms; ecosystem leaders engaged with the Equitech mission; TEDCO.
  
- **Quick Win #3: Develop and promote commercialization-oriented educational resources, opportunities and collaborative forums.**
  - **Background:** Life sciences is a specialized field that can require additional training (IP, clinical trials, contract research organizations, financing, etc.). Building leaders for Baltimore-based life sciences companies may require augmenting innovators' skills with a foundational understanding of the steps necessary to commercialize a concept. This initiative could build on the work of [Anchor Ventures](#), a collaboration between University of Maryland, Baltimore and Johns Hopkins Tech Ventures, which has been successful, but constrained by staff and budget limitations. A similar model—[Venture Cafe](#)—has helped to bring the ecosystem together in other cities.
  - **Recommendation:**
    - Leverage existing resources or build an inventory of educational resources aimed at teaching the commercialization process to up-and-coming startup leaders in Baltimore.
      - ▶ Partner with organizations such as Venture for America to identify young talent and connect them to the educational resources needed to explore an entrepreneurial path.
    - Work with partners to develop additional internships and apprenticeship programs that allow emerging talent to learn from experienced leaders across the ecosystem.
    - Foster connections between local leaders, early-stage startups and commercially-oriented faculty to enable a tighter network of supporters, mentors, guides, etc.
    - Develop and maintain a list of potential life science CEOs, engage with them regularly, and connect them to early-stage resource ideas in Baltimore.
    - Facilitate commercialization education for traditional science based innovators and do outreach within our Universities to assist those interested in pursuing a commercial path for their innovations.
  - **Who can carry this work forward?** Anchor Ventures; UpSurge; local colleges and universities; TEDCO; Maryland Department of Commerce; Venture for America; local startups, incubators and accelerators.

## Systems Changes:

### • Systems Change #1: Increase wet lab space at scale.

- **Background:** Echoing the need expressed in Quick Win #1, Baltimore must develop new dedicated spaces to house early-stage life science companies, especially for manufacturing. These spaces allow the ideas generated in the area's academic labs to spur company creation, significant investment opportunities, and the development of jobs that provide living wages. The challenge is that real estate developers do not want to take the risk of building expensive facilities without the promise of tenants, and many startups cannot commit (or do not have) capital for a lease that may be two years out and require five-year terms. Creating a pipeline of space for companies that require 3,000 to 10,000 square feet (those growing out of early-stage spaces), will likely require new construction.
- **Recommendation:**
  - Recruit local “anchor companies” to serve as anchor tenants in large-scale wet lab space facilities, so that national developers will commit to new construction projects.
  - Capitalize on current federal funding opportunities (e.g., the EDA's Build Back Better Regional Challenge, and other initiatives) to propel construction, “de-risking” the project for developers.
  - Work with the legislature to develop incentive programs that can entice developers to build these projects in response to demonstrated demand.
- **Who can carry this work forward?** Local colleges and universities; local incubators and accelerators; local and national real estate developers; UpSurge; Maryland General Assembly; City of Baltimore.

### • Systems Change #2: Recruit and retain talented faculty and leaders with track records or interest in entrepreneurship.

- **Background:** Baltimore has provided a home or launchpad to global life sciences figures (Bert Vogelstein, Justin Hanes, Bob Langer, James Gammie), but does not have the talent pool—especially for C-suite jobs—that exists in other cities. The ecosystem must find ways to attract more of these kinds of leaders. Senior faculty members should be an area of particular focus because they set the culture at academic institutions, determine which junior faculty and post-docs populate local labs, and are the most likely to develop technologies that can be commercialized.
- **Recommendation:**
  - Convince university leadership that entrepreneurial faculty are vital to Baltimore's innovation ecosystem and encourage university deans to focus on the recruitment and retention of entrepreneurial faculty.
    - ▶ Support any necessary adjustments to tenure track evaluations and performance goals to account for entrepreneurial activity.
  - Engage and highlight the stories of successful entrepreneurial faculty and alumni (e.g., Sergey Brin, a UMD graduate) to showcase the strength of the ecosystem, encourage faculty commitments and build a powerful brand for Baltimore (such as “Cell”-icon Valley).
  - Seek philanthropic support for professorships or other incentives to recruit or retain entrepreneurially minded senior faculty members interested in developing and commercializing technology.
    - ▶ While universities may take on some of this fundraising independently, consider engaging state-level institutions to make it available to all Baltimore-area colleges and universities.
- **Who can carry this work forward?** Local colleges and universities, particularly provosts, deans and entrepreneurial faculty leaders; UpSurge; MICUA; City of Baltimore.

- **Systems Change #3: Develop the life science, especially bio-manufacturing, workforce to fill jobs created by local start-ups.**
  - **Background:** As the biomanufacturing sector (and other life sciences fields) continues to grow, Baltimore has the opportunity to build a workforce that can support its specialized needs. This workforce should reflect the city population—including those without college degrees and people from historically marginalized communities. A range of opportunities already exists in this space, through programs such as those at the [BioTechnical Institute](#), which trains entry-level employees, or the University of Maryland's [I-Corps](#), which trains entrepreneurs, and educational tracks at BCCC and CCBC.
  - **Recommendation:**
    - Expand existing talent-development programs with a focus on bolstering the life-sciences workforce.
    - Advocate for more state funding to broaden the reach of these trainings.
    - Educate companies to refine job descriptions whenever possible to attract trained workers who might not have a college degree.
    - Educate K-12 students on the potential opportunities in these growing fields and offer paid internships to high school students.
  - **Who can carry this work forward?** Workforce development programs, such as those available through BTI and I-Corps; Baltimore Tracks; UpSurge; local colleges and universities, including BCCC and CCBC;; Baltimore City Public Schools.

## Moonshots:

- **Moonshot #1: Update the incentives available to recruit and retain life sciences companies in Maryland.**
  - **Background:** Current incentive packages are geared for the traditional manufacturing industry and do not fully engage Maryland life science companies. Supporting early stage companies with relatively smaller amounts of funding can often lead to dramatic growth—and some allegiance to Maryland. Without that support, our region therefore runs the risk of losing companies to other states, such as [Massachusetts](#) or [Virginia](#), which have both made concerted efforts to entice and keep companies. The legislative structures those states developed could serve as models for Maryland.
  - **Recommendation:**
    - Form a small Team of industry experts, including founders, university partners, and accelerator veterans, who are familiar with current ecosystem needs and opportunities. Task the Team with reviewing current Maryland incentives and how they compare to those in other regions and making recommendations on what needs to change.
      - ▶ Socialize the recommendations across the ecosystem to develop widespread consensus around and support for the recommendations.
    - Work with a broad coalition of partners to advocate for changes at the state level.
      - ▶ Note: Also advocate to fund SBIR-support legislation, which passed last year without funding.
    - Once the changes are passed, regularly review the available incentives to ensure Maryland remains competitive as a hub for life science companies, even as industry needs and characteristics shift.
  - **Who can carry this work forward?** UpSurge; City of Baltimore; State of Maryland, including Department of Commerce; TEDCO; Baltimore Development Corporation; local colleges and universities, including government affairs offices; local incubators and accelerators; influential ecosystem leaders and advocates.

- **Moonshot #2: Establish an Innovation Institute that crosses Baltimore’s higher education institutions to attract renowned entrepreneurially-minded faculty.**

- **Background:** The diversity and density of Baltimore’s higher education landscape and its reputation in the life sciences are core strengths for the city. An Innovation Institute would knit those strengths together and highlight the local commitment to innovation and commercialization—not just research and publications. The Institute could also spark serendipitous ideas and connections by pulling together a cohort of like-minded innovators.
- **Recommendation:**
  - Establish an Innovation Institute across local universities, grounded in Equitech principles and populated by super-star faculty members.
  - Assemble philanthropic and public funding to endow the Institute.
    - ▶ Consider expanding the [E-Innovation Initiative Fund](#) to support the Institute.
  - Work with university governing bodies to facilitate faculty members’ affiliation with the Institute.
  - Recruit senior faculty from Baltimore-area colleges and universities who have had at least two significant company exits and entrepreneurially-minded junior faculty.
  - Develop a physical space for the Institute to facilitate connections between affiliated faculty.
- **Who can carry this work forward?** Local investors, incubators and accelerators; UpSurge; leaders of existing, related efforts; other real estate companies and developers; local entrepreneurial support organizations.

- **Moonshot #3: Launch a private foundation aimed at eliminating health inequity.**

- **Background:** Health disparities in Baltimore City constitute a crisis—what one Baltimore leader called our city’s “[greatest gap](#)”—and it will take courage, vision, creativity and significant resources to solve the underlying factors, which range from genetics to poverty. Other intractable health challenges have required ambitious federal initiatives, including the [Cancer Moonshot](#) launched during the Obama Administration to funnel more than \$1 billion into 240 research projects and 70 cancer science efforts, or the Biden Administration’s proposed Advanced Research Projects Agency for Health (ARPA-H), “[tasked with building high-risk, high-reward capabilities \(or platforms\) to drive biomedical breakthroughs.](#)” Baltimore cannot muster those resources, but it has the opportunity to help steer future efforts by making breakthrough progress on one of our society’s most pressing challenges—health disparities.
- **Recommendation:**
  - Create a private not-for-profit foundation headquartered in Baltimore City with the goal of eliminating health disparities, particularly for the Black community, through funding of translational research, drug development, and health care delivery.
    - ▶ The foundation should sit outside of university administrative structures to ensure its work is not slowed by bureaucratic procedures or approval processes.
    - ▶ Include a for-profit venture philanthropy arm (a model used by many health care foundations) to make investments in for-profit companies. (One example is the Multiple Myeloma Research Foundation and the Myeloma Investment Fund.)
    - ▶ Recruit a prominent, accomplished and widely trusted Black executive with deep business ties, extensive political experience and relentless vision to run the foundation.
- **Who can carry this work forward?** National and local philanthropic partners; City of Baltimore; State of Maryland; US government agencies, including NIH; UpSurge; local colleges and universities; prominent health and life sciences researchers; corporations, including health insurance and pharmaceutical companies.

- **Moonshot #4: Establish Baltimore as the epicenter of the development of drugs that address conditions disproportionately affecting underserved communities.**
  - **Background:** This effort would build on Moonshot #3 and the remarkable density of life sciences-focused organizations in the Baltimore area—from renowned research institutions to global drug manufacturers to medtech companies—while responding to the city’s painful health disparities.
  - **Recommendation:**
    - Align and leverage initiatives taking place across our ecosystem around drug research, development and advocacy related to health conditions disproportionately affecting underserved communities (e.g., Type II diabetes, multiple myeloma, sickle cell anemia, heart disease, etc.).
      - ▶ Start by developing a clear sense of the current landscape and supporting existing efforts, such as those of [Johns Hopkins Center for Health Equity](#).
      - ▶ Build inter-institutional coalitions to bolster efforts to attract federal and philanthropic funding.
    - Develop and disseminate case studies demonstrating how Baltimore-based researchers and partners successfully created new drugs to meet the needs of underserved communities.
      - ▶ Use these to make a clear and compelling case either against the argument that there is not a high enough ROI in these investments—or for private-sector investment in early-stage R&D.
  - **Who can carry this work forward?** Local universities, including health-equity researchers and tech transfer and government relations offices; pharmaceutical and medtech companies; City of Baltimore; State of Maryland; UpSurge; US government, including National Institutes of Health and its National Institute on Minority Health and Health Disparities; philanthropic partners; health insurance companies.





# Real Estate

## Background

While much of the work of tech startups takes place in the virtual world, real estate is essential—both to housing growing companies (particularly those requiring wet labs, manufacturing space and other specialty needs) and to building community, at work and at home across Baltimore neighborhoods. The cost of suitable space can present significant barriers to entrepreneurship, and navigating the real estate market can be a challenge for many. In addition, Baltimore continues to wrestle with a painful legacy of redlining that blocked Black and brown communities from accruing generational wealth through property ownership. Through thoughtful approaches to real estate and related technologies, Baltimore has an opportunity to address long standing inequities, promote community through placemaking and attract new businesses and residents, including those untethered from previous offices or cities by the global pandemic. With new pools of federal funding available to revitalize urban economies and historically low interest rates, there has never been a better time to jump into this work. The UpSurge Real Estate Team brought together leaders in commercial, university and residential real estate, and professionals focused on co-working spaces, real estate investment management, homeownership counseling and community revitalization.

The following individuals served on the Real Estate Team.

- [Peter Jackson](#), Vice President, JLL (Team Lead)
- [Adam Rhoades-Brown](#), Development Director, Cross Street Partners (Team Lead)
- [Jasmine Respass](#), Digital Specialist, Strategic Factory (Project Manager)
- [Tyrell Dixon](#), Co-Founder, Project Own
- [Treva Ghattas](#), Managing Director, dancker
- [Amy Bonitz](#), General Partner, Anthem Communities
- [Lisa Kaufman](#), Head of Global Securities/Portfolio Manager, LaSalle Investment Management
- [Katherine Pinkard](#), President, Pinkard Properties
- [Jane Shaab](#), Associate Vice President/ Senior Vice President, UMB and UM BioPark
- [Chris Janian](#), Vitruvius, President
- [Jayson Williams](#), President/CEO, Mayson-Dixon Companies
- [Bill Struever](#), CEO/Managing Partner, Cross Street Partners
- [Shervonne Cherry](#), Director of Community & Partnerships, Spark CoWorking

## Among the questions they considered:

- What role can Baltimore's physical spaces play in fostering a growing tech economy?
- What innovations in real estate will put us at the forefront of the future of work?
- What real estate technologies can revolutionize the way people build wealth through real estate, either personal or commercial, like crowdfunding, blockchain, tokenization?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Engage in a mapping exercise and report to fully understand the local real estate landscape.**
  - **Background:** A comprehensive review of local real estate would provide the grounding to understand the needs of local tech companies and startups and develop long-term strategies to address those needs effectively.
  - **Recommendation:**
    - The exercise should:
      - ▶ Quantify how much real-estate demand is generated by tech companies/start-ups in Baltimore by product type (warehouse/manufacturing, wet lab, office); how much of the demand is lost to other cities from companies that started here but left; and changes in demand.
      - ▶ Identify existing resources, obvious gaps, challenges facing companies looking for space, and any sublease space that could be backfilled by smaller companies especially coming out of COVID.
      - ▶ Understand the nexus of neighborhood and tech locations/clusters. What are the demographic, housing market data surrounding current locations/clusters?
      - ▶ Extrapolate what is currently available or missing from Baltimore's physical landscape to meet startup demand.
  - **Who can carry this work forward?** Real estate professionals; local colleges and universities; local incubators and accelerators; UpSurge; City of Baltimore.

- **Quick Win #2: Respond to current federal funding opportunities.**

- **Background:** While many of the activities that Baltimore City or local organizations would take on with federal funding represent longer term goals, there is a clear need to respond immediately to the current, time-limited funding opportunities. Now is the right moment to make a strategic case for investment, framed around the Equitech vision, that resonates with federal, state, and local goals.

- **Recommendation:**

- Help the city and state represent the real estate needs of Baltimore’s ecosystem, making a case for strategic investment that can help accelerate short- and long-term goals. This may include:
  - ▶ Creating/funding a position at the city or state level to lead efforts to attract and channel funding for this effort.
  - ▶ Supporting existing, under-resourced programs that encourage job growth and minority business development, including the [city’s Main Street program](#).
  - ▶ De-risking the building of wet lab and startup space to create graduation spaces that can help retain and grow companies.
  - ▶ Securing funding at scale—tied to recipients’ support of equitable development—to invest in community redevelopment around our tech hubs to achieve equitable neighborhood redevelopment.
  - ▶ Supporting spaces for convening that help center the ecosystem ([Venture Cafe](#) as an example).

- **Who can carry this work forward?** UpSurge; City of Baltimore; Maryland Department of Commerce; local and regional real estate developers; local colleges and universities.

- **Quick Win #3: Help companies recognize opportunities to utilize Baltimore spaces as a resource (placemaking, programming, community building, etc.)**

- **Background:** Baltimore offers extraordinary spaces throughout the city that could be positioned as a draw for companies seeking new and interesting places to convene. Baltimore can do more to catalog and market these unique venues, elevating the ecosystem’s sense of community and reputation as a destination.

- **Recommendation:**

- Partner with Visit Baltimore to promote Baltimore as a destination for off-sites and board meetings for both home-grown and out-of-town firms, increasing exposure and utilization of Baltimore hotels, venues and companies.
- Highlight and improve the retail, events spaces and placemaking activities in Baltimore City’s public parks and waterfront locations.
- Develop an inventory of local resources for companies that want to host meetings in Baltimore—make it easier to find/use interesting spaces and plug into the city.
- Develop packages that bundle interesting meeting spaces, restaurant/caterers, hotels and fun activities (art, music, harbor).
- Focus on authentic Baltimore meeting places in neighborhoods (e.g., American Brewery, Parkway Theater, Creative Alliance, etc.), in a smaller-than-convention-center approach.

- **Who can carry this work forward?** Visit Baltimore; City of Baltimore; UpSurge; Greater Baltimore Cultural Alliance; Restaurant Association of Maryland; local museums; real estate developers; colleges and universities.

## Systems Changes:

- **Systems Change #1: Promote and help develop the infrastructure, policy and funding needed to enable a Baltimore City transportation system framed around autonomous vehicles.**
  - **Background:** The need for parking can fundamentally affect the economics and viability of a real estate project. But surface lots and multi-story garages may not be necessary at all. Autonomous technologies offer a new way to approach the challenges facing real estate developers, while also responding to Baltimore's need for more robust transit options. Our city has been open to new forms of transportation—Uber's expansion here in 2013 was one of the company's smoothest ever, for example—and the potential for driverless vehicles is significant, both to development projects and to residents' day-to-day transportation needs.
  - **Recommendation:**
    - Position Baltimore as a place where companies can establish and expand driverless technologies in an urban environment.
    - Learning from *pilots in other locations*, help develop our city's physical and policy infrastructure to welcome and enable new, safe transit paradigms.
  - **Who can carry this work forward?** Baltimore City Department of Transportation; Baltimore Development Corporation; TEDCO; UpSurge; Maryland Transit Authority.
  
- **Systems Change #2: Develop and expand incentives for recent college graduates to buy homes in Baltimore. Link those incentives to the work of local real estate development Teams.**
  - **Background:** This recommendation is driven by the success of existing *Live Near Your Work initiatives*, through which large and small local employers partner with the City of Baltimore to offer between \$2,000 and nearly \$20,000 to support the down payment or closing costs of employees buying homes within the city. Homeownership can both build wealth and help tie young diverse talent to our city, and this initiative would also promote vital opportunities for small and diverse real estate developers who are building out local residential options—but *often facing higher hurdles* when trying to do so.
  - **Recommendation:**
    - Work with local colleges and universities to develop a pool of funding that allows them to offer home buying incentives to students as they graduate.
    - Consider focusing on neighborhoods around the institutions and on homes built by smaller, local development companies and those led by underestimated founders.
  - **Who can carry this work forward?** Local colleges and universities; real estate development groups; UpSurge; corporate and philanthropic organizations; LiveBaltimore; City of Baltimore.
  
- **Systems Change #3: Create a public/private initiative to develop a set of recommendations that foster walkable, mixed-use, mixed-income communities.**
  - **Background:** Baltimore must approach the expansion of its knowledge economy with intention, driven by current research and a focus on equity and inclusion. Organizations such as the Brookings Institution have developed new ways to consider "*transformative placemaking*," the *shifting nature of the office* and *local real estate ownership*. Our city is poised to learn from these findings as we invest in our future, but it's important that we take a collective, forward-looking approach.
  - **Recommendation:**
    - Launch a public/private initiative that will develop a set of recommendations and funding mechanisms focused on future development.
    - Include recommendations on how to overcome pre-leasing and financing challenges and build graduation space for growing companies in walkable, mixed-use, mixed-income communities.

- **Who can carry this work forward?** City of Baltimore, including Comptroller's Department of Real Estate; UpSurge; commercial and residential real estate developers, including small companies and those led by underestimated founders; college and university real estate Teams; neighborhood association leaders; LiveBaltimore.
- **Systems Change #4: In the wake of workplace shifts due to COVID-19 and other forces, connect startups and small businesses looking to grow with available commercial spaces.**
  - **Background:** Innovative efforts such as the Downtown Partnership of Baltimore's [Tech Connect Grant Program](#) are helping to connect tech companies with available space. But MacKenzie Commercial Real Estate's most recent [Quarterly Market Report](#) on the Baltimore area showed the direct vacancy rate increased, year-over-year, from 16.2% to 17.9%, and metro-wide, sublease space is at a 15-year high. We have the opportunity to support the space needs of knowledge-economy companies as they launch and grow in Baltimore, while helping to accommodate the shifting footprints of existing corporations and businesses.
  - **Recommendation:**
    - Work with larger corporate partners and businesses to offer flexible spaces in currently or soon-to-be empty offices, especially in the downtown area.
    - Develop opportunities for reduced lease costs for startups or small businesses.
      - ▶ Consider tax incentives for landlords who support growth of Equitech companies.
    - Create a website that matches those businesses with available space and those looking for it, similar to B2B matchmaking.
      - ▶ Highlight vibrant neighborhood opportunities and local amenities that will draw companies' attention.
  - **Who can carry this work forward?** Local property owners; corporations and companies; local incubators and accelerators; Downtown Partnership of Baltimore; UpSurge; Baltimore Development Corporation; City of Baltimore; State of Maryland.
- **Systems Change #5: Lead the country in deploying technologies to reduce inequity and advance family prosperity.**
  - **Background:** A host of real estate-related technologies are driving evolutions in the residential market. As it develops the Equitech vision, Baltimore has the opportunity to promote those technological advances in ways that allow neighbors to prosper in place—staying in and building their own communities as the innovation economy expands and elevates career prospects for all Baltimoreans.
  - **Recommendation:**
    - Develop a variety of pilots to test technologies in ways that support the Equitech mission to help Baltimoreans prosper in place, and advocate for policies that undergird this concept. Pilots may include:
      - ▶ Deploying blockchain or tokenized real estate offerings to enable residents to own fractional shares in building, blocks or entire neighborhoods;
      - ▶ Providing neighborhood-based tech certification programs;
      - ▶ Making available—at scale—alternative insurance, financial services and credit mechanisms (like R3 Score) that allow Baltimoreans to build wealth and access opportunity;
      - ▶ Investing in work/live housing for aspiring local entrepreneurs.
  - **Who can carry this work forward?** UpSurge; corporations and companies; local incubators and accelerators; Downtown Partnership of Baltimore; Live Baltimore; Baltimore Development Corporation; City of Baltimore; State of Maryland.

## Moonshots:

- **Moonshot #1: Transform the city's physical infrastructure and transportation to support, attract and connect 21st century workers.**

- **Background:** Baltimore's transit challenges are well documented. A lack of connectivity between existing mass transit systems and often unreliable service hamper efforts to connect the city's workforce with high-quality jobs. This has created an overreliance on automobiles, which congest our streets, create unwelcoming and inhospitable streetscapes, and discourage development due to costs and challenges associated with acquiring and building surface lots and structured parking. Baltimore needs more investment in existing mass transit (light rail, revived Red Line, Bus Rapid Transit, Amtrak + MARC improvements, increased water taxi service, etc.) and in the rapid adoption of innovative solutions (driverless vehicles, dockless vehicles, boatshare, etc.) that may prove more nimble and create opportunities for local solutions.
- **Recommendation:**
  - Build on Systems Change #1 to position Baltimore as a place where companies can establish and expand alternative transit solutions in an urban environment.
  - Building from our own successes, and learning from *pilots in other locations*, help develop our city's physical and policy infrastructure to welcome and enable new, safe transit paradigms.
  - Focus federal and state investments in significant transit infrastructure, zoning changes that decrease parking requirements for housing and new construction, and incentives for residents and employees to utilize alternative transit options.
  - Ensure policy and investments advance Equitech values, spur positive new development and create connectivity to employment opportunities.
- **Who can carry this work forward?** Baltimore City Department of Transportation; colleges and universities; UpSurge; Baltimore Development Corporation; TEDCO; Maryland Transit Authority.

- **Moonshot #2: Establish Baltimore as a leader in the development and implementation of technologically-enhanced construction methods that make renovations of vacant homes cheaper and quicker.**

- **Background:** Baltimore City is home to *more than 16,000 vacant homes, and an additional 14,000 vacant properties*, and those counts may even be understated. Despite this surplus of properties, the cost and time associated with renovating them for occupancy is often prohibitively expensive. Likewise, the economics of new construction favors luxury and market-rate housing over affordable options, leaving vast swaths of the city to be plagued by the blight that vacant housing exacerbates. New and renovated housing stock has the potential to be a tool to *help stem Baltimore's population decline and attract over 26,000 new households* to Baltimore City over the next five years. Innovative technology-driven solutions utilizing techniques such as pre-fab construction have the potential to drive down the cost of housing renovations, increase access to affordable housing, and attract both new households, and 21st century construction start-up companies and jobs to Baltimore.
- **Recommendation:**
  - Position Baltimore as a place where companies can establish and expand innovative solutions to home construction challenges.
  - Work with local development agencies and the Baltimore City Department of Housing and Community Development to create new flexible incentives to encourage this sort of housing development.
  - Create incentives for companies/grants for community organizations to pilot these efforts.
- **Who can carry this work forward?** Baltimore City Department of Housing and Community Development; Maryland Department of Commerce; UpSurge; large and small residential real estate developers; neighborhood association leaders.

- **Moonshot #3: Establish Baltimore as a Top Five hub for the life sciences industry by increasing public investment in the life sciences space, scaling up resources to build wet lab space, and training a local workforce to help retain and grow these companies.**

→ **Background:** Despite Greater Baltimore's tremendous advantages in the life sciences, a dearth of wet lab space exists in Baltimore City. Companies and ideas growing out of JHU, the University of Maryland and other research entities are frequently forced to leave Baltimore City to find suitable and available spaces or to undertake (often prohibitively) expensive construction to convert existing spaces into labs. Speculative development is rare, and often the companies demanding this space can be relatively new and "non-financeable" for developers to construct the space they seek. Shared lab space has proven successful in other markets, but can require large up-front subsidies. The UMB BioPark, for example, has a 90+% occupancy rate and has had to find creative ways to carve out space needed to accommodate robust growth. (As leases on university space expired, the BioPark quickly backfilled nearly 80,000 square feet with five new companies and the expansion of two existing tenants.) With a statewide growth in life science VC funding of 700% since 2016, Baltimore's built environment needs to be able to meet and accommodate the rapid growth of this industry through new facilities, shared lab space or other configurations.

→ **Recommendation:**

- Build on the strength of our research institutions to leverage new funding resources needed to de-risk traditional and shared wet lab construction costs for developers, and stimulate new development in East and West Baltimore neighborhoods proximate to these bio hubs.
- Launch a Baltimore City- and Maryland-backed ~\$200M wet lab building funding tool sourced from SBCI, state bonds, a City GO bond or other sources that could help spur new development with reasonable expectations of repayment.
- Create focused workforce development programs as part of these efforts, connecting city residents with 21st century job opportunities and ensuring companies can find the employees they need to grow in Baltimore.

→ **Who can carry this work forward?** Local colleges and universities; City of Baltimore; UpSurge; local real estate developers with life science experience; State of Maryland; TEDCO; Baltimore Development Corporation; life sciences companies.

- **Moonshot #4: Reinvent the city's Central Business District (CBD) as a hub for homegrown technology companies.**

→ **Background:** Vacancy rates for office space in the CBD are at all-time highs, as shifts in workplace strategy and relocations to new submarkets in Harbor East and Harbor Point have accelerated. With traditional office users continuing to downsize and many national credit firms seeking space in higher rent districts, new users are needed to backfill Baltimore's most visible and traditionally iconic business district. Baltimore City has an opportunity to leverage efforts, such as the Downtown Partnership of Baltimore's [TechConnect Grant Program](#), to establish a vibrant hub in the CBD. With an abundance of available space, a centralized location, and the most transit connectivity of any neighborhood in Baltimore, the CBD offers a host of advantages for homegrown Equitech companies.

→ **Recommendation:**

- Encourage local Equitech companies to plant their flag in the CBD, supported by an augmented and well-funded TechConnect-type incentives program.
- Help Downtown attract or create new accelerators and incubators to develop and nurture its future tenants.
  - ▶ Modify existing tax credits to recognize cumulative job creation within the startup companies in an incubator, helping to offset the capital costs of building these expensive shared spaces.
- Support structural adaptations to make the downtown a more inviting live-work environment, attracting residents, employees, and employers with amenities, access to appealing public spaces and pedestrian-friendly streets.

→ **Who can carry this work forward?** City of Baltimore; Downtown Partnership; Live Baltimore; UpSurge; local technology companies.

- **Moonshot #5: Encourage a 20% increase in Baltimore’s population through the creation of desirable neighborhoods that include competitive housing and access to new-economy jobs.**

→ **Background:** The 2020 Census data revealed Baltimore City’s population had declined, for the first time in 100 years, to below 600,000 residents. The implications of that contraction are profound: increased property vacancies, a declining tax base, decreased demand for goods and services, a lack of human capital to support growing businesses, among other concerns. Reversing this exodus requires Baltimore City not only to attract new residents, but also to convince existing residents to stay. This initiative would also promote vital opportunities for small and diverse real estate developers who are building out local residential options—but *often facing higher hurdles* when trying to do so.

→ **Recommendation:**

- Through an effort that builds from the previous Moonshot recommendations, grow Baltimore’s population by 20%.
- Expand Live Near Your Work programs with greater participation from the private sector.
  - ▶ Expand opportunities for home ownership and wealth creation that anchor employees and, in turn, employer companies to the City.
  - ▶ Provide subsidies for strengthening neighborhoods in proximity to 21st century job centers.
- Increase funding for more Main Street programs.
- Develop lively, safe neighborhood retail districts, which are essential to creating strong neighborhoods that provide amenities and jobs.
- Expand federal funding opportunities to retail and minority businesses in more challenging neighborhoods.
- Marry the market-driven job creation and business investment power of innovation districts and anchor institutions with comprehensive revitalization plans for adjacent distressed communities.
- Focus on neighborhood development complete with affordable and mixed-income housing, workforce development and family support services with proximity and immediate access to new economy and Equitech jobs, working to reverse historic disinvestment in many Baltimore’s neighborhoods.

→ **Who can carry this work forward?** City of Baltimore, including the Comptroller’s Office and Mayor’s Office of Economic Development; Downtown Partnership of Baltimore; UpSurge; State of Maryland; local commercial and residential real estate developers; local neighborhood association leaders.





# Specialty/Advanced Manufacturing

## Background

Baltimore has a long history of leading the nation's industrial progress: the B&O railroad, the Canton Company, the modern printing press, Bethlehem Steel at Sparrows Point, General Motors, Dominos Sugar, and McCormick & Company to name a few. In recent years, the city has quietly extended that legacy, building a strong core of 21st century S/A manufacturers positioned to lead continued progress. To foster the growth of this industry, the city will need to consider how to build the necessary infrastructure—including incentives—to expand local S/A manufacturers and recruit others, foresee and respond to future industrial needs and nurture a talent pipeline that will make Baltimore the most attractive place for manufacturing companies to grow. The Specialty/Advanced Manufacturing Team included leaders of large and small manufacturing firms, an industry investor, a university-based entrepreneurship leader, and the head of a regional institute.

The following individuals served on the Specialty/Advanced Manufacturing Team.

- [Josh Barnes](#), COO/Owner, Harbor Designs and Manufacturing LLC (Team Lead)
- [Maeve Curran](#), Student, George Washington University (Project Manager)
- [Ken Malone](#), Executive Officer, Early Charm Ventures
- [Ronald Williams](#), Assistant Professor/ Founding Director of the Center for Strategic Entrepreneurship, Coppin State University
- [Bruce Lichorowic](#), President/CEO, Galen Robotics
- [Mike Galiazzo](#), President, Regional Manufacturing Institute of Maryland
- [Hugh Evans](#), Board member, various companies
- [Bob Welsh](#), Vice President of Technology and Open Innovation/Chief of Staff for CTO, Stanley Black & Decker

## Among the questions they considered:

- What infrastructure/knowledge/networks will Baltimore's Advanced Manufacturing companies need to scale?
- How do we encourage more advanced manufacturing companies to launch and grow in Baltimore? What are the obstacles to growing the sector?
- How can we attract Advanced Manufacturing companies to Baltimore from other cities (partnerships, hub or HQ)?
- What is the future of Advanced Manufacturing, and how do we get ahead of it?
- What role can our school system, universities and other local entities play?
- How do we create more robust relationships with customers?
- How do we grow the # of founders/workers in Advanced Manufacturing from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Promote diversity, equity and inclusion training for local advanced manufacturers that brings more Baltimoreans into the manufacturing workforce.**
  - **Background:** Groups such as the Century Foundation have called for US manufacturing to take on racial equity as one of the sector's "most pressing challenges". In a recent report, the group flagged the need to develop new approaches to recruiting and retention in manufacturing careers and to develop more inclusive workplaces. That report specifically called out the need for "education and training that fits the needs of 21st century manufacturing". While the Century Foundation focused on a robust national strategy, Baltimore has the opportunity to deploy those lessons locally.
  - **Recommendation:**
    - Use the [Century Foundation Report](#) as a blueprint for equity and inclusion training in local advanced manufacturing firms.
    - Push to reform the Workforce Investment & Opportunity Act to include incumbent worker training.
    - Create programming and incentives for local manufacturers to prioritize racial equity and educate manufacturers on racial and trauma-informed approaches to hiring and training employees.
  - **Who can carry this work forward?** Local manufacturers; DEI training organizations; UpSurge; Baltimore Tracks.

- **Quick Win #2: Highlight Baltimore as a hub for S/AM.**
  - **Background:** It is important to demonstrate—locally, nationally and internationally—that Baltimore is a place with a robust S/AM ecosystem that supports and values MBE innovators, and encourages people from outside of Baltimore to move here.
  - **Recommendation:**
    - Produce a video that focuses on medical device design and innovations coming out of Johns Hopkins and other key innovation hubs and the organizations across our ecosystem that are successfully supporting them.
    - Provide background on mechanisms to partner with local expertise via grants through organizations such as NSF, NIH, Maryland Innovation Initiative, TEDCO, Maryland Momentum Fund, Maryland Industrial Partnerships (MIPS).
    - Push the video to broad audiences through partnerships with the Maryland Department of Commerce, Harbor Designs, Gallant Robotics and others.
  - **Who can carry this work forward?** Local colleges and universities; Department of Commerce; Harbor Designs; Galen Robotics; UpSurge; local marketing firms.
  
- **Quick Win #3: Partner with the Regional Manufacturing Institute of Maryland to educate local manufacturers—and those considering coming to Baltimore—about funding and programs that exist to support them.**
  - **Background:** Many in the S/AM community are largely unaware of the immediate and potential impacts of existing and new policies and initiatives, and therefore don't take advantage of certain opportunities that could support their growth.
  - **Recommendation:**
    - Coordinate with RMI and other experts to understand policies, initiatives and funding streams (currently available and in the works) and to educate local manufacturers.
    - Draw in partners (e.g., Open Works, EcoMaps, MiHub) to reach a broad set of companies and leaders.
    - While considering the funding and programmatic ecosystem, develop a clear understanding of what products are—and could be—manufactured in Baltimore, and support the development of products that are critically needed (e.g., Baltimore companies stepped up to produce PPE during the global pandemic).
  - **Who can carry this work forward?** Regional Manufacturing Institute of Maryland; UpSurge; Open Works; EcoMap; MiHub; legislative experts at universities and ESOs; local incubators and accelerators; TEDCO.
  
- **Quick Win #4: Develop a customizable document that summarizes and highlights the tax incentives available to companies moving to or growing within Baltimore; share broadly with companies to showcase local and state support.**
  - **Background:** When considering its move to Maryland, *Galen Robotics* received a document describing the package of all available tax incentives—and the recruitment effort worked. Galen leaders talk about how the direct, supportive approach was part of the lure of moving from the West Coast. This type of collaborative effort between the Department of Commerce and the Baltimore Development Corporation could become standard practice to attract and retain targeted S/AM companies, building the local ecosystem.

- **Recommendation:**
  - Solicit buy-in from the organizations and leaders needed to transform the initiative into a structured program.
  - Align city and state incentives into one clear package that can be tailored to existing advanced manufacturers or those we wish to attract here.
  - Use the Galen document as a blueprint, adapting it to make it easy to replicate for other recruitment and retention efforts.
- **Who can carry this work forward?** City of Baltimore; Maryland Department of Commerce; TEDCO; companies recruited to come to or grow in Baltimore; UpSurge.

## Systems Changes:

- **Systems Change #1: Create a small Team of government/policy experts to advocate for local manufacturing in public-sector opportunities at state and federal levels, including in infrastructure bills.**

- **Background:** Many communities will vie to be the home of new projects and sites focused on manufacturing and entrepreneurship. A local Team could help push those opportunities to Baltimore City, with a particular focus on some of the city's traditionally marginalized or underserved areas.
- **Recommendation:**
  - Encourage and facilitate the creation of this ad-hoc Team composed of government affairs experts and leaders of local S/AM companies.
  - Develop a clear set of priorities that support the goals of the S/AM industry across Baltimore City.
  - Support the collection of information needed to make the case for those goals.
    - ▶ On a federal level, for example, this might include determining the funding and locations for manufacturing projects, or actively encouraging the Army Research Laboratory to build a sensitive compartmented information facility in Baltimore.
    - ▶ On a state level, this may include advocating for initiatives, such as recent legislation (SB577) that aimed to create more maker spaces, some of which should launch in Baltimore's underserved communities.
- **Who can carry this work forward?** City of Baltimore; local colleges and universities; Maryland Department of Commerce; UpSurge; local incubators, accelerators and companies.

- **Systems Change #2: Introduce students to the manufacturing sector and help them find pathways into the sector through industry partners.**

- **Background:** With the increasing complexity of manufacturing processes and a shortage of specialty trained labor, manufacturing companies struggle to find associates with the necessary expertise, experience and training. A need exists to close the gap between employer labor needs and the existing abundant and available labor pool.
- **Recommendation:**
  - Support and expand existing programs—like the strategic entrepreneurship program at Coppin State University—to connect and partner with more S/AM companies.
  - Review workforce training programs currently available, and those recently offered by trade organizations like RMI and the Maryland Manufacturing Extension Partnership (MD MEP) for lessons learned and opportunities to bolster existing programs or relaunch past ones.
  - Enhance programs that help students from underserved communities see advanced manufacturing as accessible and receive the training needed to enter the industry.
    - ▶ Expand the reach of the Baltimore City Public Schools' Ingenuity Project—including its innovation practicum, which places students in STEM manufacturing companies and research facilities for real-world exposure and training—to grow the STEM-related knowledge and skills of middle and high school students.



- **Who can carry this work forward?** Local colleges and universities, including Coppin State University; Baltimore City Public Schools; UpSurge; City of Baltimore, including the Mayor's Office of Employment Development; companies; workforce development organizations; Ingenuity Project.
- **Systems Change #3: Create a matchmaking service to connect local advanced manufacturers with corporations, federal labs, the Department of Defense and other large buyers.**
  - **Background:** Many manufacturers are not aware of opportunities to connect with large buyers, and many large buyers don't know enough about how to partner with local manufacturers, or the benefits of doing so. Connecting these groups would be a win-win, and may also help organizations meet stated targets around purchasing from MBEs and local suppliers.
  - **Recommendation:**
    - Develop a consortium of partners to support this effort, broadening the work of other groups (such as the local Manufacturing Innovation Hub Cooperative [MiHub] and the federal Minority Business Development Agency).
      - ▶ Together consider funding, leadership capacity and targeted programming.
    - Facilitate matchmaking of small manufacturers and large buyers through a variety of channels—online or in-person at conferences, happy hours or scheduled events.
      - ▶ Include a focus in spaces of additive, nano fiber, etc.
    - Provide easy-to-access educational resources, online or at in-person meetings, to support connections.
  - **Who can carry this work forward?** Regional Manufacturing Institute of Maryland, including MiHub; MDBA; UpSurge; City of Baltimore; large corporations; local colleges and universities; local manufacturing companies.

### **Moonshots:**

- **Moonshot #1: Make Baltimore the hub for 3D printing of tissue engineering/ bioprinting.**
  - **Background:** Baltimore would be an ideal location for tissue engineering/ bioprinting because of our location off the I-270 corridor, proximity to NIH, and concentration of world-renowned hospitals. Local companies are launching projects to work towards 3D printing of organs, implants and micro-biological organoids, which can replace animal testing of cosmetics and drugs.
  - **Recommendation:**
    - Develop meaningful supports—including proactive recruitment, tax incentives, talent pipelines, etc.—to encourage companies experimenting with bioprinting to come to Baltimore, with a particular focus on those run by people of color.
  - **Who can carry this work forward?** Early Charm Ventures, including its bio-printing group; local and regional manufacturers; City of Baltimore; UpSurge; Maryland Department of Commerce; TEDCO; local incubators and accelerators; local colleges and universities.

- **Moonshot #2: Jump start local manufacturers through a five-year, \$500 million grant program that helps regional institutional and corporate buyers cover the cost difference that may exist between locally produced products and those manufactured outside the region.**
  - **Background:** It can be difficult for local manufacturers to compete with the low prices of international groups before the local entities have grown and established a robust supply.
  - **Recommendation:**
    - Cover the difference in prices between local and international manufacturers through a government-backed grant program that would allow Baltimore manufacturers to establish supply, in turn driving down their prices and making their products more competitive globally.
    - Grow the pipeline of locally manufactured medical supplies with large entities, such as the University of Maryland and Johns Hopkins Hospitals.
  - **Who can carry this work forward?** City of Baltimore; State of Maryland, including the Department of Commerce; local colleges and universities; local manufacturers; UpSurge; TEDCO; Minority Business Development Agency.
  
- **Moonshot #3: Create a multifaceted hub of innovation and manufacturing where diverse stakeholders can align resources and collaborate when missions are synergistic, while maintaining operational independence and targeted focus on their individual core missions.**
  - **Background:** This type of hub would fill gaps in the innovation commercialization pipeline that connects principal investigators at renowned local institutions, startups that license and commercialize their technologies, organizations that can produce and manufacture the innovations and large corporations and government stakeholders that depend on the novel technologies. Such a regional manufacturing innovation hub would not just support startups, but also serve as a regional insulator against future supply-chain disruptions, providing the greater Baltimore region with the means to design and produce virtually anything that's needed, right when it's needed.

Baltimore has experience in this arena. For example:

  - Harbor Designs and Manufacturing soft-launched a trial Harbor Innovation Center dedicated to supporting startups in robotics (Arnold Automation), agri-tech (Biotropics), additive manufacturing (Danae 3D Printing), advanced materials (Early Charm Ventures), and medical devices (Sonavi Labs) with shared resources, offering engineering, supply-chain management, and contract manufacturing at its core. The effort helped inform stakeholders about what works, potential issues and unforeseeable benefits, and the center served as a convergence point for industry leaders like GE and Stanley Black and Decker to review new technologies for investment, licensing, and acquisition. Harbor pivoted to a shared-resource model, working with federal agencies and university affiliates to facilitate targeted programming dedicated to bringing new product innovations to life within one manufacturing collective.
  - The US Department of Veterans Affairs recently partnered with Harbor to co-create MAVRIC, an entity dedicated to empowering VA doctors and stakeholders to spin out companies and technologies which can be sold back into the VA to improve the tools and outcomes for caregivers and veteran patients. This mission not only supports startups, but also insulates the VA from supply-chain disruptions as all hospital systems recently experienced as a result of the global pandemic.

→ **Recommendation:**

- Develop a working group and targeted messaging to reach out to the 74 federal labs and 55 colleges and universities in our backyard, highlighting the S/AM opportunities and broadening the pipeline for new company formation in Baltimore.
- Support efforts to increase the VA's budget for MAVRIC-type activities, demonstrating the ways in which other stakeholders are backing this vital mission.
- Engage private industry stakeholders to define targeted programing at the center to meet their individual missions and goals.
- Work with existing funding sources, like TEDCO, and local and national government officials to allocate existing funding and seek new funding sources for bolstering innovation in manufacturing.
  - ▶ Such funding would be directed to the core infrastructure as well as to startups to support their use of ecosystem resources.
- Ensure the center connects with Baltimore City STEM programming at every level to foster future CTOs and a robust workforce in engineering and advanced manufacturing.

→ **Who can carry this work forward?** Harbor Designs & Manufacturing; the Veterans Health Administration; Johns Hopkins Applied Physics Laboratory; Minority Business Development Agency; UpSurge; Baltimore Development Corporation; TEDCO; Maryland Department of Commerce; National Institute of Standards and Technology; MD MEP; RMI





# Veteran & Intelligence Community Entrepreneurship

## Background

Through geography and connections to area institutions, the DMV region is rich with military connections, and more than 1 million veterans—and military communities are rich with entrepreneurship. Surveys have found that military communities are geared toward entrepreneurship, with veterans—a group that is diverse in age, gender, race, ethnicity, disability status and experience—more likely to own a business than non-veterans. Currently there is no organized resource or network available to guide transitioning service members, veterans and members of the intelligence community as they make critical decisions about where to base their startups or to seek employment in the innovation economy. Baltimore has the opportunity to build out and support this powerful, innovative community, providing networks and connections across the ecosystem. On the Team considering the best ways to support the veteran and intelligence communities were startup founders and investors with military backgrounds, former IC professionals who moved into the innovation economy and leaders focused on developing initiatives for entrepreneurial veterans and those associated with the military community.

The following individuals served on the Veteran & Intelligence Community Entrepreneurship Team.

- [Mike Leffer](#), Principal, Early Light Ventures (Team Lead)
- [Nick Culbertson](#), CEO/Co-Founder, Protenus (Team Lead)
- [Francis Poblete](#), Cybersecurity Analysis Intern, Cybersafe Solutions (Project Manager)
- [Alexander Shaw](#), Data Scientist, RedShred LLC
- [Jen Pilcher](#), Founder/CEO, Strategic Military Communications
- [Vivian Richards](#), Founder/CEO, Vitalverse Corporation
- [Bryan Schnitker](#), Capture Manager, VetsEZ
- [Marcus Startzel](#), CEO, Whitebox Inc.
- [Katie Kilby](#), Program Manager, EveryMind

## Among the questions they considered:

- How do we make entrepreneurship a compelling career path for veterans and members of our Intelligence Community (IC)?
- What infrastructure or resources does Baltimore need to support the launch, nurturing and growth of veteran- and IC-led companies?
- What role can our corporate sector, government, universities, and other local entities play in attracting and supporting veteran- and IC-led companies?
- How can we better tap into capital available to these startups?
- How do we grow the # of participants in these companies from underestimated communities?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Assemble and energize the network of military-connected entrepreneurs, businesses and supporters.**
  - **Background:** Active members of the military, veterans and their families can forge a robust network of support for each other, including in entrepreneurial pursuits. But the creative, innovative and entrepreneurial movement of the veteran community needs more attention and support. Building out this network provides another advantage and draw to Baltimore's innovation economy.
  - **Recommendation:**
    - Survey the ecosystem to develop a clear understanding of the supports the military community needs.
    - Host "Team Veterans" dinners, monthly or bi-monthly opportunities for veterans to build authentic relationships, support one another and create random "collisions" that offer long-term value.
      - ▶ Build out the email list, and the list of sponsors and restaurants, supporting those with military connections if possible.
    - Create a mixer/gathering of current members of the military, veterans, military spouses and supporters to broaden community support for Baltimore-area entrepreneurship.
  - **Who can carry this work forward?** UpSurge; members of the VICE Team; Military Muster; Maryland Department of Veterans Affairs; City of Baltimore; Rosie's List.

## Systems Changes:

- **Systems Change #1: Advance military-connected community development in Baltimore through the re-launch and expansion of Military Muster.**

- **Background:** The Baltimore [Military Muster](#) was founded in 2017 as a grassroots initiative designed to connect active duty, transitioning military, veterans of all eras, and their loved ones with the programs and resources that exist to serve and engage them. Before the COVID-19 pandemic, Military Muster had a successful track record in supporting veterans and serving as a resource for them and their families. The organization is ready to reboot its efforts, and its aims align seamlessly with those discussed by the VICE Team.
- **Recommendation:**
  - Support the efforts of Military Muster to build out connections to entrepreneurial opportunities for Baltimore’s veteran and intelligence community.
  - Start with an in-person event, such as a fall trip to Baltimore with events and activities.
- **Who can carry this work forward?** Military Muster; members of the Baltimore-area veteran and intelligence community; UpSurge.

- **Systems Change #2: Bring an organization focused on supporting military-connected entrepreneurs to Baltimore.**

- **Background:** Active members, veterans, and their spouses need support in their mission to become creators, innovators, and entrepreneurs in the new economy. [Patriot Boot Camp](#), [Bunker Labs](#) and similar organizations help to support and activate the community, including the subgroup of veterans who shy away from innovation and entrepreneurship despite a calling. Experienced organizations can help activate more members of the community and support their entrepreneurial endeavors.
- **Recommendation:**
  - Develop a full understanding of the advantages of each model, and recruit a partner that can support military-connected entrepreneurs in Baltimore.
  - Promote the opportunity broadly to draw interest from across the region, use it as a networking platform and gather more support for the community.
  - Tap into all available networks, such as [Google for Startups’ support for military-affiliated entrepreneurs](#).
- **Who can carry this work forward?** UpSurge; Patriot Boot Camp or Bunker Labs; local incubators and accelerators; Military Muster; ecosystem leaders with military connections.

## Moonshots:

- **Moonshot #1: Build a significant and Equitech-committed community of veteran and intelligence-community entrepreneurs within the next 5 to 10 years.**

- **Background:** In 2020, Baltimore was 39th on the list of the top 100 cities for veteran entrepreneurs according to [a report from the PenFed Foundation](#). Baltimore has the opportunity to leverage its location, diversity, livability, and commitment to supporting entrepreneurs as natural draws for the VICE community.

→ **Recommendation:**

- Work with military-focused organizations and leaders to determine what steps Baltimore needs to take to attract more veteran and IC entrepreneurs. Among the initiatives to consider:
  - ▶ A comprehensive review of how other states and regions have supported veteran and IC entrepreneurs.
  - ▶ Focused incentives—tax breaks, access to resources, etc.—for members of the veteran or IC community launching businesses in Baltimore.
  - ▶ A nationwide marketing campaign specifically targeting veteran or IC entrepreneurs.
- Building on earlier recommendations, actively welcome new veteran and IC entrepreneurs to Baltimore’s growing community, making sure they can quickly establish their professional and personal home here.

→ **Who can carry this work forward?** Military Muster; veteran and IC community leaders; City of Baltimore; State of Maryland; local incubators and accelerators.



A woman with dark hair tied back, wearing a denim jacket, is holding a tablet computer. The image is overlaid with a semi-transparent red filter. The text "Recommendations by Activity Team" is centered in white, bold font.

# Recommendations by Activity Team



# Company Attraction & Retention

## Background

To build an Equitech city, we must grow from within, attract new companies or talent hubs to Baltimore and ensure all local companies have the resources and connections needed to stay and grow here. And as those companies thrive and are acquired, we want to ensure they maintain a hub (or headquarters) in Baltimore, and keep a workforce here. With a goal of making Baltimore home to a wide variety of companies and founders, we cannot rely on a one-size-fits-all approach to this work. Rather, we will need to offer creative, bespoke opportunities that make Baltimore stand out from other cities. Members of this Team included university officials focused on entrepreneurship and economic development, venture capitalists, founders of growing startups and the leader of one of the region's largest charitable organizations.

The following individuals served on the Company Attraction & Retention Team.

- [Patrick McQuown](#), Executive Director of Entrepreneurship, Towson University (Team Lead)
- Tyler Senecharles, Candidate Account Manager, Adeo Advocacy (Project Manager)
- [Tom Sadowski](#), Vice Chancellor for Economic Development, University System of Maryland
- [Christopher College](#), Managing Partner, TCP Venture Capital
- [Ben Craig](#), Fiber Network Consultant, Crown Castle
- [Aaron Hsu](#), Co-Founder/CEO, ClearMask
- [Matt Wyskiel](#), Founder/President, Skill Capital Management
- [Franklyn Baker](#), President/CEO, United Way of Central Maryland
- [Joey McCord](#), Vice President of Engineering, Remine

## Among the questions they considered:

- What infrastructure will Baltimore need to attract tech startups and scale companies to grow our knowledge economy?
- Where are there opportunities to attract large companies to Baltimore—hubs, talent nodes, or HQs?
- What role can our various institutions play? Educational institutions (public school system, universities, colleges)? Healthcare institutions? Religious institutions?
- What do we need to do as an ecosystem to ensure our companies stay here?
- What incentives or special programs can we create to differentiate Baltimore as a compelling hub for location/growth?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Formalize a mentorship program for new and experienced Baltimore founders.**
  - **Background:** New founders need help as they start, and there's no need to look beyond Baltimore for established founders to provide this support—especially if we can provide more robust connections and good advice that aren't based on luck and serendipity. Qualitative and quantitative learnings about what makes for a successful startup begins with founders who have access to networks of support. This can include intellectual, financial, and functional capital networks. A formalized mentorship program that includes startups across the ecosystem will ensure that Baltimore companies grow and thrive.
  - **Recommendation:**
    - Establish a formal mentorship program to connect new and established founders.
      - ▶ Launch founder roundtables with 10-12 founders at similar stages.
      - ▶ Pair more seasoned founders with new founders.
      - ▶ Bring together sector-focused founders for networking and support.
    - Promote functional mentorship: Corporate or professional services for marketing, legal, accounting, HR, product development, operations, etc.
      - ▶ Create corporate functional workgroups, like human resources leads from a number of companies that agree to provide guidance to local startups.
    - Build specific support for underestimated founders to address their unique needs and challenges as they work to build companies without legacy support networks.
    - Create a listserv available to anyone looking for advice on how to start, run, scale, or exit a successful startup.

- Launch a regular meetup for new founders to meet with each other and with more experienced local founders to share ideas, solicit input, commiserate and deepen connections within the Baltimore ecosystem.
  - **Who can carry this work forward?** UpSurge; in conjunction with local founders; colleges and universities; corporations.
- **Quick Win #2: Build programs to keep our best and brightest college students in Baltimore after graduation.**
  - **Background:** For companies to succeed in Baltimore, we need a robust talent pipeline. Baltimore is a college town, providing a steady stream of young minds eager to work in tech-related fields. Historically, we've lost much of our top talent to other brain hubs. We aim to keep that talent here after graduation, particularly through a robust, city-wide engagement and internship program that gives preference to college students who are already in Baltimore.
  - **Recommendation:**
    - Build a program modeled off of the [Xtern program](#) in Indianapolis. This model includes a competitive application where Baltimore's top college students interview at a series of high performing startups in Baltimore. The program provides the Xterns free housing in Baltimore for 10 weeks over the summer, as a part of their Xternship experience.
    - Develop a robust and exciting series of tech career fairs for graduating seniors from local colleges to connect them with local startups.
  - **Who can carry this work forward?** UpSurge; Baltimore Colleegetown Network, in partnership with Morgan State, UMBC, Coppin State, Johns Hopkins, Loyola, Towson, and other universities across the country.
- **Quick Win #3: Establish and expand marketing effort or showcase that builds awareness and excitement about the Baltimore startup ecosystem.**
  - **Background:** Baltimore has the opportunity to build the connective tissue that binds our academic, corporate and startup communities together for awareness and support. This includes celebrating successes across the ecosystem, ensuring Baltimoreans are aware of opportunities throughout the knowledge economy, and tying companies tightly into the local network. When companies feel deeply connected to an ecosystem, it is far more difficult for them to consider locating elsewhere.
  - **Recommendation:**
    - Organize regularly scheduled events that showcase startups from across the ecosystem and innovative leaders from other cities. The events should demonstrate Baltimore's vitality and foster new connections. Attendees could include ecosystem supporters, public sector leaders, corporate partners, the media, and local, regional and national investors.
    - Expand the distribution of UpSurge's bi-weekly newsletter, ensuring more people know about activity and opportunities across the city.
    - Expand the number of gatherings that regularly bring entrepreneurs together—such as Founder Fridays, Equitech Tuesdays—to foster connections and increased ties to Baltimore.
  - **Who can carry this work forward?** UpSurge; local incubators and accelerators; BDC; Downtown Partnership; Live Baltimore; Anchor Ventures; and other colleges and universities.
- **Quick Win #4: Collaborate with local Business Intelligence Teams to build a systematic outreach algorithm to attract founders, companies and talent with ties to Baltimore, and/or businesses in our areas of strength .**
  - **Background:** In order for our ecosystem to grow into national prominence, we need to find people who are starting businesses that have connections to Baltimore and entrench them deeply into the community. People who have an established connection to Baltimore are less likely to leave.

- **Recommendation:**
  - Launch a collaboration with Greenspring in first quarter of 2022 to identify 100 targets for outreach—founders, companies and tech talent with connections to Baltimore because they were born or lived in Baltimore, went to school here, or are in an industry where Baltimore has significant strength.
  - Hire a national business development director at UpSurge to cultivate relationships with targets identified. This individual will share information about local efforts, incentives, connections to local founders and events, invitations to join local communities, connections with academic and corporate counterparts, etc.
- **Who can carry this work forward?** Greenspring Associates; UpSurge; partners like Baltimore Homecoming.
- **Quick Win #5: Create a Swat Team to work with companies that are being acquired in Baltimore to encourage the acquiring company to maintain a talent base or second headquarters in Baltimore.**
  - **Background:** One of the hallmarks of a thriving tech ecosystem is companies that scale and have successful exits. Baltimore has had a number of these in recent years, but has sometimes lacked an organized effort to build relationships with acquirers in an effort to encourage them—with connections and/or incentives—to maintain a second HQ or talent hub in Baltimore.
  - **Recommendation:**
    - For our later stage startups, maintain an active dialogue with the CEO about potential exits. When appropriate, bring together a group of local leaders who can work with the CEO and the acquiring company to share the benefits of maintaining a significant presence in Baltimore.
    - Create a set of incentives to specifically encourage retention in these situations.
  - **Who can carry this work forward?** UpSurge; City of Baltimore; State Department of Commerce; in conjunction with universities and companies when relevant to the acquisition.

## Systems Changes:

- **Systems Change #1: Build high-quality pooled resources for startups.**
  - **Background:** Startup founders can get bogged down navigating and purchasing core services like business insurance, health insurance, legal, accounting, etc.
  - **Recommendation:**
    - Build preferred relationships with professional services providers—lawyers, accountants, human resources, marketing, website design—to offer turnkey, high quality offerings to startups, at affordable prices. Both local and national providers may be targets for this kind of startup support, as demonstrated by GoDaddy’s Empower program.
    - Create pooled insurance vehicles for both business and health insurance so that cash-strapped startups can provide employee insurance and maintain appropriate business insurance.
  - **Who can carry this work forward?** UpSurge; local professional associations like SHRM, AMA, etc.; national companies.
- **Systems Change #2: Buy Baltimore.**
  - **Background:** One of the most important parts of founding a business is securing pilot partners and new customers. In many thriving startup cities, the corporate and academic communities give local startups first priority when considering purchases. The initiative would build on previous corporate and university commitments to the local economy through efforts, such as [HopkinsLocal](#) and [BLocal](#).



- **Recommendation:**
    - Launch ‘Buy Baltimore,’ a campaign to encourage major Baltimore companies and institutions to prioritize Baltimore startups.
    - Develop a series of activities to help corporate partners connect proof of concept pilot partners, or early customers of local startups. This initiative would simultaneously support startups and give large companies a first look at promising new technologies.
    - Launch product fairs to showcase new technologies.
    - Build roundtables of functional leads, like HR, operations, innovation, product, legal, accounting to meet relevant businesses to consider purchase or pilots of their products.
  - **Who can carry this work forward?** UpSurge; corporations and companies.
- **Systems Change #3: Create a free or low-cost option for collaborative startup space, perhaps modeled after Brown Advisory’s innovation floor, or the Downtown Partnership’s BOOST program.**
    - **Background:** A huge hurdle for young companies is finding affordable space to house their businesses. Often, where there is affordable space, it is not conducive to collaboration and connection building.
    - **Recommendation:**
      - Provide several floors of an under-occupied building in the CBD to offer startups solid, affordable space for rent. Young businesses would save money, build connections, and have a more compelling incentive to come here. If a non-dilutive grant also accompanied the space offering, we would have a national model that may not only support local founders, but may attract other companies from outside Baltimore.
      - Allow businesses to reside in an office space in the city for up to three years, rent free. The business would qualify for free rent until it makes \$1 million in profit, or for three years— whichever comes first.
    - **Who can carry this work forward?** UpSurge; Downtown Partnership; the commercial real estate community; neighborhood business organizations.

## Moonshots

- **Moonshot #1: Build a robust state and local investment and tax credit program for Baltimore startups with at least three employees.**
  - **Background:** In states like [Massachusetts](#) and Pennsylvania, a strategic set of tax credits and investment funds for biotech companies has helped to rapidly accelerate the Boston and Philadelphia life sciences sectors. This could be done in Maryland in a range of sectors or through a sector-agnostic approach.
  - **Recommendation:**
    - Organize a coalition of universities, city leaders, and entrepreneurs to advocate for investments and tax credits to be provided to new tech startups launching in or moving to Baltimore. The companies should have 3 employees, and must stay and grow in Baltimore to be eligible for a Baltimore-focused pool of funds. We estimate the government would have to allocate \$250M to \$500M to launch the first-come, first-serve program, which would be promoted through economic development organizations.
  - **Who can carry this work forward?** UpSurge; university government relations teams; entrepreneur and investor groups.



# Corporate Partnerships

## Background

The dozens of large corporations spread out across our local landscape are foundational to Baltimore's success. They will also play vital roles in bringing the Equitech vision to life as they engage with our tech startups as customers, partners, advisors and investors, and extend new employment and growth opportunities to underestimated Baltimoreans. Members of the Corporate Partnership Team included leaders in the state's technology development corporation and region's economic development alliance, founders of social enterprises focused on health, job training and hospitality, the leader of a university incubator, the founder of a media company and an investment advisor.

The following individuals served on the Corporate Partnerships Team.

- [Frank Glover](#), Formerly Senior Director of Venture Funds, TEDCO (Team Lead)
- [Kiera Abdul](#), Student, Goucher College (Project Manager)
- [Scott Robertson](#), Account Director, Year Up
- [Matthew Reeds](#), Executive Director, Reeds Fund
- [Jenny Owens](#), Asst. Dean/Asst. Professor, University of Maryland Baltimore
- [Dana Ledyard](#), Vice President of Strategy, Catalyte
- [Madison Marks](#), Director of the Social Innovation Lab, Johns Hopkins University
- [Zachary Garber](#), Client Advisor, Alex. Brown
- [Trevor Pryce](#), Principal, Outlook Company
- [Michele Whelley](#), President/CEO, Economic Alliance of Greater Baltimore

## Among the questions they considered:

- How do we engage Baltimore/regional corporations to deepen their engagement with local startups as customers, pilot partners, advisors, and investors?
- How do we engage national corporations as partners?
- How do we tap large companies' innovation Teams and subject matter experts to provide startups with greater access to knowledge and networks?
- What cross-sector collaborations (public and private, industry, nonprofit and for profit) can provide symbiotic growth opportunities? How might we extend these opportunities to underestimated Baltimoreans?
- How can we leverage corporate partnerships to drive equity and inclusive growth for all residents?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Encourage corporations to share or develop channels through which employees can serve as mentors, advisors and board members for local startups.**
  - **Background:** Connections between and among corporations and startups can provide win-win benefits—knitting the ecosystem together while offering opportunities to infuse corporations with innovative ideas and to provide startups with advice, broader networks and potential partnerships.
  - **Recommendation:**
    - Encourage corporations to support employees interested in serving as mentors, advisors and board members for local startups.
    - Create a portal or matchmaking service that can help connect an employee's skills and interests with startups seeking that support.
      - ▶ Develop a calendar of happenings at local incubators and accelerators, allowing corporate employees to attend demo days and other milestone events.
    - Create corporate roundtable groups of functional experts, like marketing, finance, operations, innovation, etc. to meet with local startups to understand opportunities to pilot products, offer advice and mentorship, and build relationships and networks across the ecosystem.
  - **Who can carry this work forward?** UpSurge; Techstars; local incubators and accelerators; local corporations and large companies; local colleges and universities; Greater Baltimore SCORE.

- **Quick Win #2: Encourage corporations to share their networks, introducing vendor and customer companies that might build a significant presence in Baltimore.**
  - **Background:** Corporate contracts are vital to many businesses—and may be influential in where those businesses choose to locate. As Baltimore builds out our innovation ecosystem, we aim to recruit as many new companies as possible.
  - **Recommendation:**
    - Develop channels through which corporations can share information (names, sectors, specific interests) about vendors and customer companies that may be open to developing a greater presence in Baltimore.
    - Create an easy-to-share list of resources (particularly government incentives) that corporations can send to out-of-town vendors and customers that may be interested in locating—or partially locating—in Baltimore.
      - ▶ Ensure those resources are also easily available to Baltimore-based companies.
  - **Who can carry this work forward?** UpSurge; corporations; City of Baltimore; State of Maryland; Baltimore Development Corporation; TEDCO; recent company recruits to Baltimore.
  
- **Quick Win #3: Bolster connections with senior corporate leaders in the Baltimore diaspora to encourage engagement with—and possibly relocation to—our ecosystem.**
  - **Background:** The close-knit nature of many Baltimore ("Smalltimore") communities leaves people uncommonly tied to their hometown. Baltimore Homecoming is already focused on our city's far-flung diaspora, and could help focus on senior corporate leaders who may be open to supporting the Equitech vision and, potentially, opening a hub here. UpSurge is already supporting an initiative to scrape LinkedIn profiles for local connections, and partnering with Baltimore Homecoming to reach Baltimore natives in other parts of the country.
  - **Recommendation:**
    - Build and bolster connections to "expat" Baltimoreans who have become corporate leaders, particularly those in—or with connections to—the tech and investment communities.
      - ▶ Refine partnership with Baltimore Homecoming to host in-person and virtual events for tech and investment leaders.
      - ▶ Open new channels to connect those leaders to Baltimore's innovation ecosystem as mentors, advisors and investors.
  - **Who can carry this work forward?** UpSurge; Baltimore Homecoming; Greenspring Associates; City of Baltimore; Visit Baltimore.

## Systems Changes:

- **Systems Change #1: Develop a portal and in-person showcase events through which local corporations and startups can connect.**
  - **Background:** Startups can benefit from the funding, resources and access to customers that corporations can provide. Corporations can benefit from investment in startups and access to their disruptive innovation and new technologies. The advantages of these partnerships are becoming increasingly clear. McKinsey reported that between 2013 and 2019 (before the global pandemic), there was [a 32% year-on-year growth in corporate venture investments](#). But there are not always easy ways for local corporations and startups to find each other.
  - **Recommendation:**
    - Develop a portal through which startups can demonstrate their technologies and corporations can highlight areas of interest or need.

- Host bi-annual showcase events at which corporations and startups can connect in person.
  - Encourage corporations to engage a variety of employees in this effort, as startup technologies will speak to a range of organizational interests and needs.
  - **Who can carry this work forward?** UpSurge; corporate partners; Baltimore Development Corporation; Greater Baltimore Committee; City of Baltimore; Maryland Department of Commerce; local incubators and accelerators.
- **Systems Change #2: Expand talent pipelines that connect tech-focused graduates of local colleges and universities with Baltimore-area corporations.**
    - **Background:** Drexel University's [\*College of Computing & Informatics' \(CCI\) Corporate Partners program\*](#) allows local companies to be first in line to hire tech-focused graduates—filling significant corporate needs while retaining young talent locally. Baltimore-area schools have forged a variety of ties with corporations, but this kind of formalized pipeline could help facilitate efforts to develop, recruit and retain top tech talent.
    - **Recommendation:**
      - Work with large Baltimore-area companies to develop a clear understanding of their talent-related needs and with local colleges and universities to catalog relevant academic programs (e.g., computer science, game design, digital forensics).
      - Pilot a program that supports connections between corporations and local academic programs.
    - **Who can carry this work forward?** Local corporations and large companies, particularly Human Resources departments; local colleges and universities, particularly career services offices; UpSurge; City of Baltimore; Baltimore Development Corporation.
- **Systems Change #3: Develop and disseminate resources to help companies recruit and retain more diverse employees.**
    - **Background:** Baltimore's Equitech vision supports greater diversity throughout the innovation economy, but companies can struggle to successfully recruit, hire and retain underestimated talent. One local coalition, Baltimore Tracks, has brought together leaders from local technology and tech-enabled companies who are committed to increasing opportunities for People of Color in tech. The group facilitates dialogue, shares resources and works to ensure equitable and inclusive policies and practices at their own companies.
    - **Recommendation:**
      - Support a broad expansion in the number of companies involved in Baltimore Tracks, or a corporate coalition modeled from Baltimore Tracks' work.
        - ▶ Ask corporate leaders to champion the effort to recruit other participants.
        - ▶ Encourage and celebrate commitments of local companies and corporations.
        - ▶ Develop materials and trainings that can be shared at meetups or other gatherings.
    - **Who can carry this work forward?** Baltimore Tracks; UpSurge; large corporations, companies and institutions, including their DEI-focused staff; Greater Baltimore Committee.

## Moonshots:

- **Moonshot #1: Make Baltimore a major hub for global tech corporations.**
  - **Background:** Cities such as [\*Austin, TX have emerged as global tech hubs\*](#), luring corporations interested in top talent, affordable living and an attractive business environment. These corporate offices bolster the local tech ecosystem, creating a virtuous circle that draws still more companies. At a time of massive displacement and disruption due to COVID and other factors, Baltimore has the opportunity to make a case for its thriving innovation ecosystem, diverse workforce and compelling Equitech vision.

→ **Recommendation:**

- Work with city and state governments to create incentives for corporations relocating their headquarters or building a significant presence in Baltimore.
- Broadly promote Baltimore as a convenient and attractive business environment and a burgeoning capital of diverse tech talent.
  - ▶ Target corporations with links to Baltimore, such as those sponsoring a Techstars Equitech accelerator or working on significant projects with local universities.
  - ▶ Recruit current corporate leaders in Baltimore as visible cheerleaders for the city's advantages.

→ **Who can carry this work forward?** City of Baltimore; State of Maryland; Baltimore Development Corporation; Greater Baltimore Committee; UpSurge; corporate and university partners.

• **Moonshot #2: Develop and expand a Baltimore-first program that systematizes connections between corporations and startups/growth companies.**

→ **Background:** Building on Systems Change #1 and the “buy local” ethos of many Baltimore corporations and universities, Baltimore has the opportunity to develop more systematic ways to extend that commitment to local startups and growth companies. Having large institutions as partners, clients and investors can be an enormous advantage to small companies as they scale.

→ **Recommendation:**

- Through an existing business-minded venue, such as the Greater Baltimore Committee, solicit corporate interest and develop an initiative structure that responds to expressed needs and includes a way of evaluating startups and growth companies as potential vendors.
- Extend benefits, such as tax incentives, to large companies that purchase from startups or pilot products with them.

→ **Who can carry this work forward?** Greater Baltimore Committee; City of Baltimore; Baltimore Development Corporation; UpSurge; local corporations, large companies, colleges and universities; local startups and growth companies.





# Digital Equity

## Background

In a recent report released in conjunction with the US Census Bureau's American Community Survey, 76 US cities included 100,000 or more households. One-sixth of all those urban households lacked any kind of home Internet subscription, including a cell data plan. And for poorer households—those with annual incomes below \$35,000—the unconnected percentages were much higher across the board. The median percentage of lower-income households without home internet, for all US cities above 100,000 households, was 30%.

In Baltimore, approximately 40% or 96,000 households in Baltimore City are denied the power of broadband to apply for jobs, pursue educational opportunities, participate in civic life and organize for social change.

Solving the digital divide requires an ecosystem approach, recognizing Digital Equity itself is a complex and dynamic system with many moving parts. A piecemeal approach will not work, instead, we must look for solutions that seek to maintain the integrity and functioning of the ecosystem as a whole, while also working to address discrete aspects.

## Digital Equity Ecosystem

The [\*Community Informatics Lab\*](#) of Simmons University defines a Digital Equity Ecosystem, as the "interactions between individuals, populations, communities and their larger sociotechnical environments that all play a role in shaping the digital inclusion work in local communities to promote more equitable access to technology and social and racial justice".

We agree.

## Justice Based Framework

As an ecosystem builder focused on making Baltimore the first Equitech city in the US, UpSurge must make digital equity a crosscutting value in its work, serving as both a North Star, and a catalyst for systems change, threaded through every aspect of the initiative. **Digital equity in our framework requires more than appeals to diversity and inclusion, recruitment and retention strategies, and access to capital. Rather, we seek a transformed ecosystem born of deep (and even disruptive) shifts in practices, norms, culture, and composition aimed at identifying and strengthening the role tech should play in advancing social and racial justice in Baltimore.**

At a minimum, this includes:

- **Engaging in systems analysis** by working to understand the ways in which history, power, resources, policies and practices have conspired to create and reinforce inequity.
- **Working to transform the policies, systems and practices** that produce unfair and unjust outcomes by race.
- **Shifting power** through prioritizing the leadership of communities most impacted, and grounding the work in solutions that ensure material changes in neighborhoods.
- **Collecting data across lines of race, ethnicity, gender, ability, immigration status and more**, recognizing we cannot solve inequities without understanding who is most negatively impacted and why.
- **Supporting long-term investments** in time, money, resources, and people that aspire to make equity real at the individual, organizational, neighborhood and city level.

The following individuals served on the Digital Equity Team:

- [amalia deloney](#), Vice President/Director of Digital Equity, Robert W. Deutsch Foundation (Team Lead)
- [Zinna Moore](#), Student, St. Mary's College of Maryland (Project Manager)
- [Kelly Hodge-Williams](#), Director of Development/Partnerships, PCs for People – Maryland
- [LaRon Martin](#), Co-Founder, The Virtual Village
- [Kendra Parlock](#), Executive Director, NPower Maryland
- [Jason Hardebeck](#), Director of Broadband and Digital Equity, City of Baltimore
- [Jonathan Moore](#), Founder/CEO, RowdyOrbit
- [John Brown](#), Entrepreneur/Business Development Executive

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Develop an open wireless network.**
  - **Background:** Across the country low-income, especially Black and Latinx, households lack internet access at disproportionately higher rates. Income inequality, biased credit scoring and other forms of systemic racial discrimination are just some of the barriers they face. These households, approximately 40% or 96,000 (data from 2020), in Baltimore City are denied the power of broadband to apply for jobs, pursue educational opportunities, participate in civic life and organize for social change. Further, the pandemic has served to exacerbate the extreme economic, racial, and social disparities that have long characterized Baltimore neighborhoods. Given the compounding effect of the digital divide and its racialized local impact, it's critical to support the City in developing a feasible short-term solution that provides a step on the path to a permanent solution.
  - **Recommendation:** Led by the Director of Broadband and Digital Equity, the City of Baltimore should immediately begin developing a public access wireless network and deploy it by 2026, leveraging existing infrastructure (conduit, fiber optic cable, public buildings, etc.) to create free Wi-Fi hotspots in hundreds of locations throughout the City. This project will focus on providing access for the most underserved neighborhoods and communities, especially those with school-age children.

- **UpSurge focus areas to engage:** Government/Policy; Corporate Partnerships; Investor/Capital Attraction; Marketing/Narratives; Digital Health; Real Estate; Inclusive Entrepreneurship

## Systems Changes

- **System Change #1: Design and build a public option for internet in Baltimore.**
  - **Background:** High-speed internet has become essential to full participation in today's economy and is increasingly considered the *"fourth utility,"* joining the more commonly recognized vital goods: water, electricity, and heat. As such, a superfast fiber network has the potential to transform cities. When city residents are able to connect to the internet at high speed through greater choice, better pricing and faster access, everyone benefits. Today's digital economy depends on high-speed connections to the internet, and *recent studies indicate,* communities with fast, affordable, and reliable networks will both attract and cultivate jobs. To truly achieve systems change in the areas of technology and telecommunications will require dismantling a history of segregation and disinvestment in communities of color that continues in the present as digital redlining, with the same racialized impacts.
  - **Recommendation:** Broadband is necessary to participate in today's economy, yet today's broadband markets are increasingly monopolized leading to digital redlining. To address this systemic inequity will require a **public sector solution** designed to bridge the growing divide between digital haves and have nots. The City of Baltimore, working in partnership with philanthropy, business, and civil society is uniquely positioned to design and lead this "fiber to the home" initiative, ensuring universal access regardless of zip code.
  - **UpSurge focus areas to engage:** Government/Policy; Investor/Capital Attraction; Marketing/Narratives; Talent Development + Pathways; Digital Health; Real Estate; Inclusive Entrepreneurship (we can later explain how we think these Teams should engage or would be impacted).

## Moonshots:

- **Moonshot #1: Close the digital divide through a comprehensive community initiative, ensuring all residents—regardless of social, economic or immigration status—have the technologies, tools, and skills needed to harness the power of universal affordable high-speed internet.**
  - **Background:** In April, the Deputy Secretary-General of the UN stated that *"without decisive action... the digital divide will become the new face of inequality."* Her statement illustrates the compound impacts of the digital divide for communities who are locked out of life changing forces such as healthcare, education and economic opportunity. Moreover, it follows a 2000 acknowledgement by the Clinton administration that internet access and the skills to use the technology were necessary for full participation in US economic, political and social life. Across Baltimore City, 73.3% of white households have home broadband, compared with 50.2% of African American households and 46.4% of Latinx households. It is clear that in this city, the digital divide is also a racial divide.
  - **Recommendation:** To ensure that current and future generations of Baltimoreans are not locked out of full participation in society, Baltimore must implement a Comprehensive Community Initiative to definitively close the digital divide. CCIs are locally organized, multi-sector collaborations that build local capacity and coordinate resources towards a common goal of improving population-level outcomes. Utilizing this approach will ensure that Baltimore's most vulnerable families and neighborhoods are able to participate meaningfully and fully in our city's economic, civic and social life.
  - **UpSurge focus areas to engage:** All



# Government & Policy

## Background

The Equitech vision is distinguished, in part, by its recognition that policies and practices focused intentionally on equity and inclusion are essential parts of propelling Baltimore into the top tier of innovation cities. We must consider both how existing policies hinder equitable growth across our ecosystem and also how we can put in place new policies, systems and practices that will advance progress toward our vision. The Government and Policy Team included current and former leaders in local, state and federal government with particular expertise in tech, data and finance; tech company executives and consultants; a university researcher; a corporate ethics expert; and the former head of a national philanthropy.

The following individuals served on the Government & Policy Team.

- [Michael Castagnola](#), Chief of Staff, SmartLogic (Team Lead)
- [Dana Johns](#), Senior Portfolio Manager - Private Equity, Maryland State Retirement and Pension System (Team Lead)
- [Nayeon Kim](#), Summer Analyst, Brown Advisory (Project Manager)
- Jennifer Curran
- [Daniel Goetzel](#), Executive Director, Inventors to Founders at Cyber NYC
- [Alphia Stephens](#), Director of Quality, Moser Consulting
- [Omowunmi Oni-Dandridge](#), Lead IT Specialist, Social Security Administration
- [Katherine Schulze](#), General Counsel/Chief Ethics Officer, Ethics Alliance Maryland
- [Monica Nimmagadda](#), Lead Innovation Data Analyst, Mayor's Office of Performance & Innovation at City of Baltimore
- [Kamaria Massey](#), Research Assistant, Morgan State University
- [Ganesha Martin](#), President, GMM Consulting

## Among the questions they considered:

- How can we build an Equitech city, leveraging civic technologies and policies toward shared prosperity?
- What role can Baltimore civic leadership play in making the city more attractive for tech startups and investors/investment?
- How can we become the city where startups using cutting-edge technologies to broaden access and increase equity want to launch, build and grow?
- What policies can drive education, transportation and real estate in ways that allow our communities to prosper in place as we expand participation in the knowledge economy?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Host a day-long conference with Baltimore City-based tech founders and BIPOC ecosystem leaders to define startups' needs and barriers.**
  - **Background:** Information gaps exist between successful Baltimore startups and those that didn't make it. Candid conversations about the barriers and obstacles facing local companies would benefit new and prospective founders, as well as ecosystem leaders who could help promote change.
  - **Recommendation:**
    - Convene a facilitated meeting to educate new and prospective startup founders on how to overcome common barriers to success.
      - ▶ Include explanations of the challenges and obstacles others have experienced, including the root causes of these obstacles, how other startups avoided bottlenecks, why previous efforts to build startups have failed and what existing programs and initiatives exist that are addressing the identified challenges.
      - ▶ Share how different layers of government are supporting startups, what policies are particularly important to startups in various sectors and how to advocate for change.
    - At the conference, clarify what UpSurge seeks to do and how the Equitech vision can help.
    - Empower conference attendees to leave with more knowledge about the issues startups face in Baltimore.
  - **Who can carry this work forward?** UpSurge; City of Baltimore; Baltimore Tracks; local incubators, accelerators and startups; local colleges and universities.

- **Quick Win #2: Create a tech-ecosystem scorecard that defines critical areas, and demonstrates how Baltimore ranks among other cities in tech, neighborhood, housing, economy, innovation, etc.**
  - **Background:** A lack of benchmarking and comparable data between Baltimore, other cities and the overall tech industry makes it difficult for companies to evaluate the current landscape and our vision for Baltimore as the country's first Equitech city. A tech scorecard that ranks characteristics important to the tech industry nationally would help to create a baseline for making Baltimore attractive for tech ecosystems and measuring our progress over time. What are the top things tech companies seek when they move to a city? And how does Baltimore compare right now?
  - **Recommendation:**
    - Evaluate existing scorecards and rankings (such as those from Startup Genome and StartupBlink) to determine what factors to focus on and what data already exist.
    - Document successes within the tech ecosystem and analyze what factors contributed to the successful outcome.
      - Share these case studies broadly to inform other Baltimore startups, highlighting contributing factors to understand what enables successful outcomes.
    - Use the scorecard to understand what other cities have done well, and how we can learn from that work.
  - **Who can carry this work forward?** Local colleges and universities; UpSurge; Baltimore Tracks; Baltimore-based tech companies.
  
- **Quick Win #3: Start tech classes in senior care facilities across the city.**
  - **Background:** A gap in tech education keeps many senior citizens from accessing or keeping up with changing social and work environments. To bridge the gap, our city should provide quality tech education to seniors framed around the needs they identify. A tech-ready senior community would reduce senior financial abuse and fraud, making it easier for seniors to conduct their lives (paying bills), be in touch with others, and use 21st-century tools to facilitate everyday tasks. This effort would increase personal independence and social connectedness with the community because tech allows for community participation, reduces isolation—and contributes to Equitech.
  - **Recommendation:**
    - Work with senior service providers and tech education providers to research local and national programs that provide in-person or online tech training to seniors, such as [BCCC's ElderLearn](#) and Baltimore County's use of [GetSetUp.io](#).
    - Develop a tech-education program that can be used at senior facilities across the city.
  - **Who can carry this work forward?** Local colleges and universities, including BCCC; tech-education service providers; Maryland Department of Aging; Baltimore City Health Department, including the Division of Aging.
  
- **Quick Win #4: Create a fund-of-funds model to support diverse capital allocators using Maryland's \$166M State Small Business Credit Initiative (SSBCI) allocation from the US Department of Treasury and other available sources.**
  - **Background:** Funding available from government entities or through local governments' applications to national finance sources often goes unnoticed by people and companies that could benefit significantly from the support. SSBCI, for example, can fund direct investment in startups and other small businesses. These funds could be pooled and managed by a single fund that could help prioritize Equitech-focused companies and founders.
  - **Recommendation:**
    - Identify points of contact within Baltimore City government who would be responsible for applying for SSBCI funds from the US Treasury or other potential funding sources. Support efforts to get a greater share of funding to Baltimore City programs or startups.
    - Recommend existing or new Baltimore-based programs or startups that should be priorities for new funds.

- Ensure a focus on equity—both in how Baltimore, a city that has been deprioritized, gets equitable access to the funds, and in how underestimated founders are considered when funds are allocated.
- **Who can carry this work forward?** UpSurge; City of Baltimore; Baltimore Development Corporation; Maryland Department of Commerce; TEDCO; local colleges, universities, incubators and accelerators; local funds, particularly those with a focus on underestimated founders.

## Systems Changes:

- **Systems Change #1: Lower barriers to attaining training for tech-related careers, and make the options transparent and easily accessible.**
  - **Background:** Allowing everyone equal opportunity to access their preferred career pathway would prompt growth in equitable access within the city, foster new talent for the tech industry and incentivize people outside of Baltimore to grow their careers here. The Team wanted to expand not just the traditional pathways to tech industry through formal education but also access to resources for self-teaching and specializing in tech-related trades. These options should be transparent and available to anyone interested in entering the tech industry, particularly youth expressing interest in learning more.
  - **Recommendation:**
    - Make it possible for anyone wanting to pursue a tech-related career to have a fair opportunity to do so by lowering the barriers for students who may not be able to afford traditional higher education costs.
    - Work with local colleges, universities and trade schools to make self-teaching resources widely available, giving students opportunities to realize non-traditional career paths—and at their own pace.
      - ▶ Subsidize the cost of self-teaching resources so they are widely accessible to all students.
    - Support efforts to make education pathways more affordable, whether through debt forgiveness or other channels.
  - **Who can carry this work forward?** UpSurge; local colleges, universities and trade schools; virtual education organizations; Baltimore City Public Schools; City of Baltimore.
- **Systems Change #2: Increase access to public capital for underestimated fund managers and entrepreneurs.**
  - **Background:** Fund managers and entrepreneurs of color often have a difficult time accessing or raising capital to jump-start their new ideas or funds. In the first half of 2021, for example, funding to Black entrepreneurs jumped fourfold compared to the same period in the previous year, but remained only [1.2% of venture capital invested in US startups](#) in that time; one of the factors driving the growth was an increase in diversity within the venture capital community. Growing an Equitech city requires supporting underestimated entrepreneurs and ensuring they have equitable access to knowledge and capital. In the public sector, this means facilitating access to government funds, grants and loan guarantees.
  - **Recommendation:**
    - Adopt or create a system that allows entrepreneurs to quickly access all public funds/capital available for application and allocation.
    - Encourage local and state government entities to allocate funds that are not application-based to underestimated businesses or to funds that support such ventures.
  - **Who can carry this work forward?** UpSurge; Baltimore Development Corporation; TEDCO; Maryland Department of Commerce; US Small Business Administration; experienced tech entrepreneurs.

- **Systems Change #3: Create a comprehensive open source database of every startup in the city/region and create financial incentives for startups to keep their data accurate.**
  - **Background:** To increase efficient data-sharing for startups and talent looking into moving to Baltimore, it would be helpful to have a database where startups can share company data allowing others to look into what their business may be doing, how they are doing, and what they could be doing to take advantage of available capital.
  - **Recommendation:**
    - Launch a collective effort from the State of Maryland (including the Office of the Comptroller) and local startups to create a regularly updated database to keep track of information.
    - Develop financial incentives, such as R&D tax credits, for startups to input information on their businesses.
    - Encourage the state to gather real-time data for recruitment purposes and to make startups aware when they hit milestones that provide access to additional incentives.
    - Promote the database widely across the ecosystem as a tool for startups and others interested in Baltimore.
  - **Who can carry this work forward?** UpSurge; EcoMap; Fearless; Maryland Office of the Comptroller; Baltimore City Finance Department; Baltimore Development Corporation; local incubators and accelerators; local tech startups.
  
- **Systems Change #4: Donate refurbished (but working) technology to low-income households (and schools).**
  - **Background:** In conjunction with Systems Change #1, it is important that students have access to technology for both formal and non-traditional education. Obtaining technology (physical hardware, like a computer) and software (learning systems or WiFi) can be expensive and inaccessible for many low-income households and students who want to enter the tech industry. This recommendation would expand or enhance efforts of local nonprofits (such as [PCs for People](#)) to help those who want to explore or enter the tech industry with the resources to do so, build talent and opportunity across Baltimore City, and increase the pool of potential workers available for local tech-industry jobs.
  - **Recommendation:**
    - Build on the [collaborative efforts](#) that emerged during the COVID-19 pandemic to support the tech needs of low-income Baltimore families to expand the services.
    - Work with nonprofits, philanthropies, corporations and Baltimore City officials to broaden systems that collect used or refurbished technology through tech companies, stores and drop-off locations, to enlist support from organizations that could refurbish donated equipment, and to formalize distribution channels to low-income families, schools and/or neighborhoods.
    - Launch a marketing campaign to solicit corporate, philanthropic and individual contributions to the effort and to ensure students, schools and neighborhood organizations that would qualify for donations know about and participate in the initiative.
  - **Who can carry this work forward?** UpSurge; PCs for People; City of Baltimore; Baltimore City Public Schools; Digital Harbor Foundation; local corporations and tech companies; philanthropic supporters.
  
- **Systems Change #5: Reduce structural racism, misogyny and homophobia in the tech industry.**
  - **Background:** An underlying theme across all of UpSurge's work, this recommendation focuses on reducing inequities ingrained in the structure of our ecosystem. In order for all businesses and Baltimoreans to thrive, people of all races, genders, sexualities and abilities must have an equal chance at accessing resources and information when seeking opportunities and building successful careers. While this work may take years, the first step is acknowledging existing barriers that prevent Baltimore and our region from being a fully equitable tech city.



→ **Recommendation:**

- Gather a working group that can evaluate structural inequities within the tech industry (capital access, education, etc.) and how other cities and states have developed policies or practices to break down those barriers, and develop a clear set of recommendations for Baltimore and Maryland. These might include:
  - ▶ Advocating for local and federal governments to make equitable incentives available to tech companies by creating policies that promote equity and startups led by underestimated founders.
  - ▶ Seeking potential incentives that local governments can provide through capital and funding to startups in Baltimore.
  - ▶ Considering withholding funding and capital to companies that don't meet a diversity goal/threshold or awarding funds to companies that exhibit equity and inclusion in their businesses.

→ **Who can carry this work forward?** UpSurge; City of Baltimore; Baltimore Tracks; elected officials at local and state levels; leaders of local tech companies.

**Moonshots:**

• **Moonshot #1: Make Baltimore a global leader in solving gender and racial pay inequality.**

→ **Background:** Longstanding concerns about gender and racial equity and pay gaps exist around the world, and are *pervasive in the tech industry*. Equity is essential to make Baltimore (or any jurisdiction) attractive and welcoming to talent and businesses. As we push to make Baltimore the country's first Equitech city, it is crucial to push for a business ecosystem where talent is compensated fairly based on skill and contributions to the community—and to develop and model practices that other cities can follow.

→ **Recommendation:**

- Encourage companies—and the city government—to conduct internal pay-equity analyses. Compile and release the results widely, engaging Baltimore's civic leadership and business community in any challenges revealed.
  - ▶ Develop a regular, anonymous system to report out on pay equity, marking progress over time.
- Partner with organizations that have gathered best practices around leveling pay gaps to support changes with large and small tech companies.
- Highlight employers whose practices exemplify equitable pay; encourage other employers to follow suit.
- Ensure Baltimore is well recognized for pay equity as one aspect of Equitech.

→ **Who can carry this work forward?** UpSurge; City of Baltimore; local tech companies; Baltimore Tracks; Baltimore Development Corporation; Greater Baltimore Committee; local colleges and universities; local incubators and accelerators.





# Inclusive Entrepreneurship

## Background

Building an inclusive ecosystem that welcomes, encourages, and creates opportunities for all entrepreneurs, especially those who have been overlooked and underestimated for far too long, is the driving ambition of Equitech. Inclusive entrepreneurship touches on every part of UpSurge's mission—fostering underestimated founders, building wider pathways into the innovation economy, empowering historically marginalized communities, expanding access to the venture capital needed to launch and grow companies—and undergirds every part of its work. The Inclusive Entrepreneurship Team included: leaders from a variety of sectors, including energy, education, workforce development and human services; business and startup consultants; and people focused on accelerating and investing in startup growth.

The following individuals served on the Inclusive Entrepreneurship Team.

- [Phil Croskey](#), CEO/Co-Founder, MD Energy Advisors (Team Lead)
- [Marianna Pappas](#), Program Director, Conscious Venture Lab (Project Manager)
- [Lindsay Ryan](#), Venture Development Director, University System of Maryland
- [Terence Dickson](#), CEO, Terra Loft Consulting
- [Jeffrey Griffin](#), Executive Director, Franciscan Center
- [Anne Hilb](#), Leadership Coach/DEI Consultant, Graymake Consulting LLC
- [Stephen Auvil](#), Chief Program Operations Officer, TEDCO
- Rev. Bernette Jones, Founder/Owner, Consciousness Agency: Conscious Life Design Systems
- [Rajan Patel](#), Co-Founder/CEO, Dent Education
- [Peter Metsopoulos](#), Director of Leadership/Entrepreneurship Institute, Roland Park Country School
- [Emma Simpson](#), Director of Strategy Partnerships, Venture For America
- [Emily Sullivan](#), UX Designer
- [Kimberly Harrison](#), CEO, KHDreamers
- [Devon Corbin](#), Associate Director of Corporate Engagement, Year Up

## Among the questions they considered:

- How do we grow the number of startups led by Black, Brown, LGBTQ+, women and differently-abled people in Baltimore?
- How do we grow Teams with people from underestimated communities, both to support current local talent needs and to broaden the pipeline of future knowledge-economy leaders?
- How do we identify areas of non-traditional entrepreneurial thinking? Where are problem solvers creating their own solutions with minimal resources?
- How do we empower underestimated communities to see entrepreneurship as a meaningful and viable career opportunity?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: To foster entrepreneurial interests of middle and high school students in Baltimore City, host an idea pitch competition and develop a program to connect interested youth with more experienced entrepreneurs.**
  - **Background:** Early exposure to entrepreneurship is critical for young people to consider it as a realistic path to employment, wealth building, and greater fulfillment. This idea could leverage and expand the reach of existing local entrepreneurship initiatives, including Baltimore City Public Schools' CTE pathways and programs hosted by organizations such as Junior Achievement, Our Dream Foundation, Jubilee Arts and others. Pitch competitions might help add new hands-on, ideas-driven components to how students experience entrepreneurship.
  - **Recommendation:**
    - Host an idea pitch competition/event for middle and high school students in Baltimore who are "entrepreneur-curious".
    - To facilitate the event, consider tying it to a summer experience or existing programs in local middle and high schools.
    - Match students interested in pursuing their idea after the competition with experienced local entrepreneurs (Big Brother/Big Sister model) who can support, encourage and guide their entrepreneurship.
    - Host a parent/caregiver information session to educate them on the benefits of supporting

their children's entrepreneurial aspirations. This may help the concerns of parents/caregivers resistant to supporting entrepreneurship, stemming from the desire for their children to pursue a path with more financial stability.

- Invite the youth entrepreneurs to serve as mentors after their ideas reach a certain point, such as generating revenue, in a pay-it-forward model.

→ **Who can carry this work forward?** Baltimore City Public Schools; existing youth entrepreneurship programs; UpSurge; local incubators, accelerators and investors; local colleges and universities; Venture for America.

- **Quick Win #2: Make education around entrepreneurship and the Equitech movement broadly available.**

→ **Background:** Entrepreneurial education, with a particular focus on diversity, equity and inclusion, increases exposure and enables young people, hesitant innovators and those from underrepresented communities to see the knowledge economy as a viable career path. A focus on exposure and training could broaden the pipeline of entrepreneurs from and in Baltimore.

→ **Recommendation:**

- Offer a variety of easy-to-access resources aimed at education related to entrepreneurship and the Equitech vision. These could include:
  - ▶ Free webinars on topics related to entrepreneurship.
  - ▶ A landing page that pulls together virtual materials such as online courses, templates, articles, books, lists of local resources, etc.
  - ▶ In-person seminars, events and lunch-and-learns hosted in partnership with the school system, local government, local businesses and civic/social organizations.
  - ▶ Sourced training programs on how to validate business models.
  - ▶ Entrepreneurial education in every public middle and high school, along with opportunities to visit local businesses and startups.
- Encourage companies and leaders across the ecosystem to highlight Equitech companies and ideas in their newsletters, social media streams, etc.
- Collect data and feedback to validate which initiatives work.

→ **Who can carry this work forward?** ? UpSurge; local entrepreneurship programs; colleges, universities, incubators and accelerators; Baltimore City Public Schools; City of Baltimore; TEDCO.

- **Quick Win #3: Host the first Baltimore Equitech Conference in 2022.**

→ **Background:** Baltimore has an opportunity to highlight its Equitech vision, the vibrancy of the ecosystem and the advantages of doing business here. The conference should be aimed at founders, startup CEOs and entrepreneurs—especially those from diverse or underrepresented backgrounds—allowing them to connect, experience the city and share ideas and experiences. The conference could be modeled on successful events such as the [AfroTech Conference](#) or the [Black Enterprise Entrepreneurship Summit](#).

→ **Recommendation:**

- Organize and host a Baltimore Equitech Conference in 2022.
  - ▶ Recruit national and local speakers to discuss the Equitech vision, promising practices in Baltimore and other locations and how to broaden the Equitech network.
  - ▶ Consider tracks focused on particular sectors, such as MedTech, FinTech, FoodTech, etc.
- Build a host committee to draw in broad networks of potential participants and to promote the conference.
- Partner with Baltimore organizations—such as Visit Baltimore, Live Baltimore and the Baltimore Development Corporation—to showcase the city and help attract new entrepreneurs and their businesses to Baltimore.

→ **Who can carry this work forward?** UpSurge; Baltimore Development Corporation; TEDCO; City of Baltimore; Live Baltimore; Visit Baltimore; local colleges, universities, incubators, accelerators and tech-focused companies; other ecosystem leaders.

## Systems Changes:

- **Systems Change #1: Support efforts to shift traditional investment practices, opening more opportunities for underestimated founders.**
  - **Background:** Traditional venture capital investment methods have not worked for underestimated founders and historically marginalized communities. Even after a large jump over the past year, for example, funding to Black founders [made up just 1.2% of total venture funding](#) in the first half of 2021. And women-led startups [received 2.3% of venture capital](#) in 2020. An inclusive ecosystem requires huge shifts in these statistics.
  - **Recommendation:**
    - Support the national movement that encourages VC firms and funders to institute diversity clauses into term sheets.
    - Work with the state, TEDCO, the city and federal funding sources to build a dedicated pool of funds to support high-growth startups led by underestimated founders.
    - Create a pitch competition or other mechanism for promising early-stage companies led by underestimated founders to present to Angel groups to raise visibility and secure funding.
    - Institute sponsored pitch competitions, like [PitchBlick](#), for non-dilutive funding and profile raising.
  - **Who can carry this work forward?** UpSurge; State of Maryland; City of Baltimore; TEDCO; local venture capital firms; angel investor groups; local accelerators and incubators.
- **Systems Change #2: Develop a package of incentives to attract and retain founders in Baltimore, with a focus on Equitech companies.**
  - **Background:** Other US cities have launched incentive programs to lure and retain entrepreneurs and their companies, building density in the local ecosystem. (Consider the [Arch Grant program](#) in St. Louis, MO, or Tulsa, OK's [Tulsa Remote](#).) In a moment when workers and companies have been untethered by the global pandemic, Baltimore has an opportunity to tie together the work of various partners (Live Baltimore, Baltimore Development Corporation, etc.) to make a case for locating and growing here.
  - **Recommendation:**
    - Work with Baltimore City to gather a small Team of aligned organizations that can work through potential incentives. This could include:
      - ▶ Expanding or enhancing grants for housing;
      - ▶ Offering tax deductions, credits, low interest loans or access to grant opportunities for tech companies committing to maintaining a presence in Baltimore City and/or hiring Baltimore residents;
      - ▶ Providing access to free or heavily discounted work space for tech companies committing to maintaining a presence in Baltimore City and/or hiring Baltimore residents.
    - Launch national marketing campaign to promote incentive package and Baltimore's Equitech vision, targeting underestimated founders.
  - **Who can carry this work forward?** City of Baltimore; State of Maryland Department of Commerce; TEDCO; Baltimore Development Corporation; UpSurge; Live Baltimore; corporations, incubators and accelerators.

- **Systems Change #3: Develop and expand a trajectory of opportunities for young people to learn about and get involved in entrepreneurship, including opportunities to execute their own ideas.**
  - **Background:** Starting in middle school, many Baltimore students have access to entrepreneurship-focused opportunities in and outside of school—opportunities that may help students envision entrepreneurship as a viable and appealing career option. By creating pathways and pipelines to align these efforts, our ecosystem can make it easier for students to find and take advantage of these courses, programs, summer and after-school experiences, internships and apprenticeships. Some of the resources may also benefit adults looking to hone entrepreneurship skills or shift into the innovation economy.
  - **Recommendation:**
    - Create educational spaces in which public/private/parochial school students meet for shared classes or trainings.
      - ▶ Develop curricula that provide background on entrepreneurship and investment, exposing students to the spectrum of ideas, views and skills that energize our ecosystem.
      - ▶ Ensure anti-racist work is central to the curricula and conversations.
      - ▶ Consider entrepreneurship leagues—similar to sports camps—that bring Baltimore’s future founders together to learn with and from each other.
    - Work with the public school system to support the expansion and enhancement of courses and CTE tracks focused on entrepreneurship and innovation, based on identified needs and opportunities.
    - Encourage all Baltimore-based companies to create opportunities for paid internships, allowing more talent from low-income communities to participate.
    - Introduce a robust talent identification program that places college-age talent in startups using a curated talent matching algorithm.
    - Work with local colleges and universities to:
      - ▶ Launch or contribute to courses, clubs or trainings covering venture capital and equity, both to help future founders understand the investment landscape and to help that landscape evolve to more closely match the city’s demographics.
      - ▶ Support efforts to recruit more BIPOC participants in undergraduate and graduate entrepreneurship programs, and to infuse Equitech values into those programs.
    - Develop Student Founder and Venture Fellow/EiR Programs within local venture funds, accelerators and syndicate groups.
  - **Who can carry this work forward?** Baltimore City Public Schools; Archdiocese of Baltimore Catholic Schools; local private schools; local youth entrepreneurship programs; UpSurge; Baltimore-area colleges and universities; Baltimore Tracks.
- **Systems Change #4: Develop systems that support Main Street businesses interested in scaling beyond Baltimore.**
  - **Background:** Entrepreneurial journeys often start with a Main Street business, and grow from there. Baltimore has launched strong channels for Main Street companies, including the [\*BOOST Program\*](#), which offers robust support for Black-owned retail businesses in Downtown Baltimore storefronts. Baltimore has the opportunity to build on that and other Main Street programs to link the Main Street and startup communities locally through mentorship and other resources.
  - **Recommendation:**
    - Identify promising Main Street entrepreneurs, in partnership with programs like Downtown Partnership’s BOOST program, who aspire to scale their businesses beyond Baltimore.
    - Create a funding mechanism and a curriculum and/or mentorship model for supporting these entrepreneurs as they go to scale.
  - **Who can carry this work forward?** UpSurge; Downtown Baltimore Partnership; Fearless; City of Baltimore; local incubators and accelerators; corporations and ecosystem leaders.

- **Systems Change #5: Recruit sports and entertainment celebrities—especially those with ties to Baltimore—to promote the Equitech vision, the potential of entrepreneurship in Baltimore and the opportunities to invest in Baltimore-based Equitech companies.**
  - **Background:** Broad groups of people listen to celebrities and are influenced by their endorsements. Consider recent examples: NBA legend Shaquille O’Neal [headlined a Skillsoft conference](#), and award-winning director Spike Lee [filmed a Coin Cloud commercial](#). Efforts such as [Pharrell Williams’ Black Ambition](#), which focuses on Black and Latinx entrepreneurs, provides one example of how a celebrity can energize and draw attention to innovation, particularly from underestimated founders.
  - **Recommendation:**
    - Establish a Tech Speaker Series with musicians, entertainers and professional athletes interested in supporting the Equitech vision—in Baltimore or beyond.
    - Develop easy ways for Ravens and Orioles players to invest their money in local entrepreneurs.
      - ▶ Consider working with the clubs to offer an optional local-investment clause that would allow them to invest a percentage of their earnings back into Baltimore companies, individually or through a sidecar fund.
      - ▶ Offer opportunities for players to meet with Baltimore investors and/or companies to learn more about the VC process and the benefits of investing in their city.
    - Track Maryland athletes that go professional in any sport and other celebrities or influencers, and reach out to them with opportunities to stay connected to and invest in Baltimore’s tech ecosystem.
  - **Who can carry this work forward?** City of Baltimore; Baltimore Homecoming; UpSurge; local marketing companies; local venture investors; Ravens and Orioles organizations, including current and former players.

## Moonshots:

- **Moonshot #1: Launch 50 to 50 Campaign.**
  - **Background:** As the Equitech vision takes hold and Baltimore’s ecosystem supports hundreds of startups at all stages of development, we will have the opportunity to focus on and grow more businesses to scale, recognizing the economic advantages that brings to our entire city.
  - **Recommendation:**
    - Identify, scale and provide operational resources to 50 Black-owned businesses, allowing them to grow to \$50M+ in revenue.
    - Conduct an environmental scan of potential high-growth minority-led firms in Baltimore.
    - Develop a Team that can help identify resources and customers to support the scale efforts of those firms.
    - Enhance the investment ecosystem through: the creation of a fund(s) to co-invest in Black-owned or Equitech companies; stronger connections to national venture firms and corporate leaders who can help catapult Baltimore companies that have reached their Series A.
  - **Who can carry this work forward?** City of Baltimore; TEDCO; Baltimore Development Corporation; local investors; UpSurge; Fearless; Baltimore’s ESOs.

- **Moonshot #2: Make a college education accessible to all Baltimore City residents.**

- **Background:** *Research shows* that student loan debt can affect the trajectories of entrepreneurs or potential entrepreneurs, limiting their abilities to start or grow companies. Eliminating that debt may unleash the entrepreneurial ambitions of many Baltimoreans, allowing them to found startups or hire more employees in their companies sooner. Through programs such as *Say Yes to Education* or the *Kalamazoo Promise*, other cities have found ways to offer high school graduates free tuition at community colleges or state universities—and unencumbered financial choices after college. (Baltimore has *explored this idea* previously, but the city's growing focus on entrepreneurship may help to reignite interest.)
- **Recommendation:**
  - Through tax allocations and philanthropic commitments, create a funding pool that can support free tuition at community colleges or state universities for Baltimore City high school graduates.
  - Solicit public and private sector support for the program, adapting national or city-based models to fit Baltimore's interests.
  - Work with local colleges and universities to garner their support, and to build out wraparound services (e.g., transportation, tutoring, mentorship, connections with other scholars in the program) that participating students may need.
  - Establish criteria and guidelines around eligibility (e.g., years of residency, required GPA, etc.), and promote the program energetically throughout the city, including to all Baltimore City middle and high school students and their families.
- **Who can carry this work forward?** City of Baltimore; State of Maryland; local foundations and donors; Maryland-based colleges and universities; UpSurge.





# Investor/Capital Attraction

## Background

Baltimore has been a financial services powerhouse for much of its history, from Alex. Brown's founding as the country's first investment bank in 1800 and the many offshoots, collaborators and competitors it spawned. Part of that landscape was a deep base of venture capital and private equity investors. However, Baltimore has seen a decline in the entirety of this broad-based financial infrastructure over time.

It's time to build back, leaning into the momentum of Baltimore's fast growing startup ecosystem. A strong and growing pool of investors from angel to private equity would create a continuum of capital to fuel existing companies and attract new ones. And the Equitech vision is a foundation to build a distinctly dynamic and diverse base of investors and companies. The Investor and Capital Attraction Team included respected investors from small and large firms and a large foundation, and leaders focused on health care, operations consulting, student entrepreneurship, regulatory compliance and more.

The following individuals served on the Investor/Capital Attraction Team.

- [McKeever “Mac” Conwell](#), Managing Partner, Rare Breed Ventures (Team Lead)
- [Eileen O’Rourke](#), Chief Financial Officer, Abell Foundation (Team Lead)
- [Content McLaughlin](#), COO/CFO, Conscious Venture Lab (Project Manager)
- [Ben Seigel](#), Principal, Baltimore Development Corporation
- [Nick Duafala](#), Managing Partner, SoFin Ventures
- [Jeff Cherry](#), Managing Partner, Conscious Venture Lab
- [Moss Amer](#), Director of Corporate Application, Audacious Inquiry
- [Greg Cangialosi](#), Managing Partner, Olive Ventures
- [Matt Hellauer](#), Managing Partner, Patuxent Capital
- [Jeffrey Musgrove](#), Managing Partner & Head of PE/VC Advisory Services, Think
- [Ryland Sumner](#), President, Point Field Partners
- [Josh Ambrose](#), Director of Student Ventures, Johns Hopkins University Tech Ventures
- [Melanie Mendoza](#), Founder, MHM Consulting LLC
- [John Davis](#), General Partner, Domaine Precious Metals Partners
- [Elise Liberto](#), Partner, Private Equity Group, Brown Advisory
- [Huff Millard](#), Vice President, Greenspring Associates
- Rehan Dawer, SoFin Ventures

## Among the questions they considered:

- How do we rebuild our local private capital infrastructure?
- How do we build greater awareness of, and interest in, the Baltimore tech scene among investors from across the country?
- How do we expand opportunities for underestimated founders at every stage of investment?
- How do we become a hub for Black venture capital as it rapidly grows across the country?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Launch a campaign to draw awareness to Baltimore’s deal scene.**
  - **Background:** In the past year, our tech ecosystem has demonstrated extraordinary success. For example, the first half of 2021 broke records in terms of dollars raised by Baltimore-based companies, with a 133% increase in annualized run rate over the same period in 2020, and the average deal size up 83% in that time. Our ecosystem has an opportunity to highlight those trends and the funds being closed, and play the message within Baltimore and to those interested in our ecosystem: “bring your dollars back to Baltimore”.
  - **Recommendation:**
    - Collect quotes from investors about investing in Baltimore, including success stories, and amplify the messages broadly across the Baltimore ecosystem and beyond.
    - Enlist current investors—and those with connections to other investors—to share the messages widely through their networks.
  - **Who can carry this work forward?** UpSurge; investor networks; individual investors; TEDCO; Baltimore Development Corporation; City of Baltimore.

- **Quick Win #2: Develop a hub and training program specifically geared for Black VCs.**

- **Background:** Countless articles (see: [Harvard Business Review](#), [Bloomberg News](#), etc.) highlight the challenges of Black venture capitalists. Organizations, such as [BLCK VC](#), have set up channels through which to provide Black investors with the tools—including access, education and community—needed to succeed in this sector. Baltimore has the chance to build on those efforts, leveraging its strengths and those of leaders across our own ecosystem.
- **Recommendation:**
  - Create a hub for Black VCs, graduating one or two cohorts from a venture training program before the end of 2022.
  - Offer trainings and resources on how to garner an investment track record.
    - ▶ Include Black potential fund managers and angel investors, including those who are interested, those who are not investing, and those who are already investing.
  - Establish partnerships with existing groups/organizations, including philanthropies seeking fund managers.
  - Encourage potential local angel investors to consider investing, and provide “Angel Investing 101” training to those interested.
  - Scout opportunities for new funds.
- **Who can carry this work forward?** UpSurge; Black VC; HBCU VC; Greenspring Associates; Oper8tor; local incubators and accelerators; local investors and asset allocators. (Note: Mac Conwell and Jeff Cherry offered to help with this effort.)

- **Quick Win #3: Launch a Baltimore showcase.**

- **Background:** A regular showcase event would demonstrate the vitality of the Baltimore ecosystem, as well as providing opportunities for investors and companies to connect.
- **Recommendation:**
  - Host a quarterly Baltimore showcase to bring investors together to connect, share ideas and meet with local companies. The showcase ought to be intentional about broadening access to information for local and outside investors.
  - Create a report or scorecard after two or three successful events to determine if the showcases resulted in further investment in Baltimore.
- **Who can carry this work forward?** UpSurge; local, regional and national investors; local incubators and accelerators; local colleges and universities.

- **Quick Win #4: Deploy SSBCI funding to support investments in Baltimore City founders.**

- **Background:** The American Rescue Plan expanded funding for the State Small Business Credit Initiative (SSBCI), which can fund a range of programs to support local entrepreneurs and capital markets.
- **Recommendation:** Meet with SSBCI representatives to discuss how the initiative can be used to spur investment in Baltimore City-based founders, with a focus on those aligned with the Equitech vision, and with TEDCO to support a similar investment focus.
- **Who can carry this work forward?** TEDCO; US Department of the Treasury; Baltimore Development Corporation; UpSurge; Maryland Department of Commerce; local investors.

- **Quick Win #5: Raise the visibility of Baltimore among investors by highlighting the city's positive stories, unique strengths, and diversity.**

- **Background:** Investors, and those with the ability to bring capital, do not view Baltimore in the same way they view places like New York, Boston, and Silicon Valley, and many investors don't spend time here. Countering negative perceptions of Baltimore requires a concerted, intentional movement to tell positive, compelling, uplifting stories. The UpSurge website could become a repository or database for such stories.

- **Recommendation:**

- Celebrate successes across Baltimore's ecosystem in a much more strategic and intentional way, partnering with organizations who can highlight those successes.
- Broaden the reach of UpSurge's newsletter (The UpShot); encourage people who receive the email to share it with others, here and across the country; partner with organizations with a larger outreach and audience to help spread the word.
- Utilize social media to generate impact; engage social media experts to develop a plan for promoting Baltimore's successes and investment opportunities.
- Launch an advertisement campaign to attract capital to Baltimore through a variety of channels.
- Develop relationships with journalists and media organizations that can report on Baltimore stories and investment opportunities. As Techstars accelerators launch in Baltimore, leverage the Techstars platform to highlight Baltimore successes and opportunities for investing here.
- Highlight the expertise and success of diverse and emerging fund managers in Baltimore.
  - ▶ Consider how to spotlight this work at existing emerging-manager summits, partner with National Association of Securities Professionals (NASP) or—if necessary—plan for a launch of a new summit.

- **Who can carry this work forward?** UpSurge; UpSurge Team members; TEDCO; Baltimore Development Corporation; Live Baltimore; City of Baltimore.

## Systems Changes:

- **Systems Change #1: Develop a centralized system/network to connect investors and founders; include a focus on the disconnect between resources investing within and outside of the region.**

- **Background:** A lack of access to information about companies and opportunities can present significant barriers between investors and founders. Other regions in the country seem to offer more opportunity for cooperation and access to information among investors and founders.

- **Recommendation:**

- Create a repository for information and clear processes for disseminating relevant data to investors and founders.
- Develop an Investor Alliance where investors share deal opportunities and information about the investment process. The Alliance should showcase local founders and IP, and include a database of local investors/firms who are looking for opportunities to invest or who are willing to participate in funding rounds at various stages.
  - ▶ Partner with EcoMap and other interested organizations to gather initial data.
  - ▶ Build on successful local practices, such as Betamore's work to curate founder needs and calls to action.
- Foster the UpSurge Slack channel as a place to connect founders, investors and mentors to curate questions, request support or collaboration, and create an archive of information and expertise.
- Develop a resource library on the UpSurge website; receive and answer questions (anonymous or not).

- Consider expanding these resources to a larger geographic region.
    - ▶ Partner with groups such as the Greater Washington Partnership to engage anchor and corporate executives and focus on regional issues.
  - **Who can carry this work forward?** Entrepreneurial support organizations; EcoMap; Fearless; Betamore; Greater Washington Partnership; UpSurge; VC/PE firms; family investment offices.
- **Systems Change #2: Develop an education campaign to educate potential investors on the different ways to invest, unlocking available capital from investors who may have less experience or tolerance for risk.**
  - **Background:** One way to increase capital in the region is to reduce barriers to investment, such as lack of knowledge, aversion to risk or misunderstanding of investors' specific interests.
  - **Recommendation:**
    - Develop a series of education/awareness sessions on early-stage investing to be shared with investor groups and/or potential investors. Topics could include: a broad array of investing models, such as warranties, zero equity, royalties; a range of go-to-market strategies; how to find vertical-specific opportunities; etc.
    - Compile and disseminate existing resources detailing investment opportunities.
    - Develop investment templates, vehicles, and processes that can be accessed by potential, less knowledgeable investors.
    - Promote new products under development.
  - **Who can carry this work forward?** UpSurge; Conscious Venture Lab; local accelerators and incubators; TEDCO; Baltimore Development Corporation; local entrepreneurial support organizations.
- **Systems Change #3: Create an UpSurge Investment Committee to support angel investors.**
  - **Background:** Potential investors who feel they do not have enough information about local opportunities or are not qualified to assess local startups, may choose not to invest at all. Guidance from respected investors may help to unlock local capital, while also supporting the ecosystem's continuing development.
  - **Recommendation:**
    - Establish an UpSurge Investment Committee by identifying and recruiting a group of respected managers who will receive information about investment opportunities, develop a score sheet, perform due diligence, and disseminate information to potential angel investors.
    - Identify and recruit potential angel-stage investors interested in committing to shared sidecar funds steered by the Investment Committee.
    - Focus investments on local startups, encouraging founders and entrepreneurs to launch, grow and keep their companies in Baltimore, while helping investors build deeper ties in the ecosystem.
  - **Who can carry this work forward?** UpSurge; Baltimore Angels; Better Investing Group; local accredited investors.
- **Systems Change #4: Consider the use of a structured finance vehicle to spur capital sources on the sidelines by adding principal protection insurance, lowering their risk.**
  - **Background:** An insurance product currently available in limited markets and in defined cases allows investors to purchase insurance to cover the amount of debt/equity investment through an investment trust company. That company holds the assets, acts as guarantor, and issues the insurance policy (similar to when large organizations, like hospitals, self-insure), offering protection so the investor receives a fixed return on their investment. Use of a risk-mitigation product could lead otherwise skittish investors to infuse new capital into the region.



- **Recommendation:**
  - Obtain more information about the insurance product, with the goal of reducing risk to investors.
  - Review legal opinions and take a position supporting (or not) the use of this product to mitigate risk so potential investors are aware this exists.
- **Who can carry this work forward?** UpSurge; UpSurge Team members with knowledge of the product; legal partners; colleges and universities; local companies; local investors and investment advisors.

## Moonshots:

See UpSurge [Inclusive Entrepreneurship Moonshots](#) for reference.

- **Moonshot #1: Create a Baltimore-based Sovereign Wealth Fund (SWF), backed by bonds.**

- **Background:** Sources of capital are fragmented, making it difficult for companies seeking investment. SWFs exist [around the world](#), including in several US states, such as Texas, where they focus on education. Baltimore could create a VC fund focused on local tech companies founded or led by BIPOC entrepreneurs.
- **Recommendation:**
  - Create the Baltimore Sovereign Wealth Fund as a public-private partnership.
  - Research how other states/jurisdictions have build SWFs, including by soliciting advice from local experts at T. Rowe Price, Brown Advisory and the Baltimore Development Corporation (particularly in terms of how SWFs have been used in designated Opportunity Zones), engaging the legal community and considering best practices nationally and internationally.
  - Leverage existing assets, including the state mandate to invest in minority companies and the Community Reinvestment Act.
  - Consider how Baltimore City is currently investing its funds, the best way to focus a local SWF and the best way to ensure broad participation from local investors of all sizes.
  - Create a board of experts to oversee banking, investment, insurance, etc.
  - Include a unit investment trust and an institutional investor framework, creating our own Baltimore mutual fund with talent here in Baltimore.
- **Who can carry this work forward?** City of Baltimore; State of Maryland; UpSurge; Baltimore Development Corporation; Brown Advisory; T. Rowe Price; other legal, banking, insurance companies and investors.

- **Moonshot #2: Build digital and physical spaces where investors and companies looking for funding can connect.**

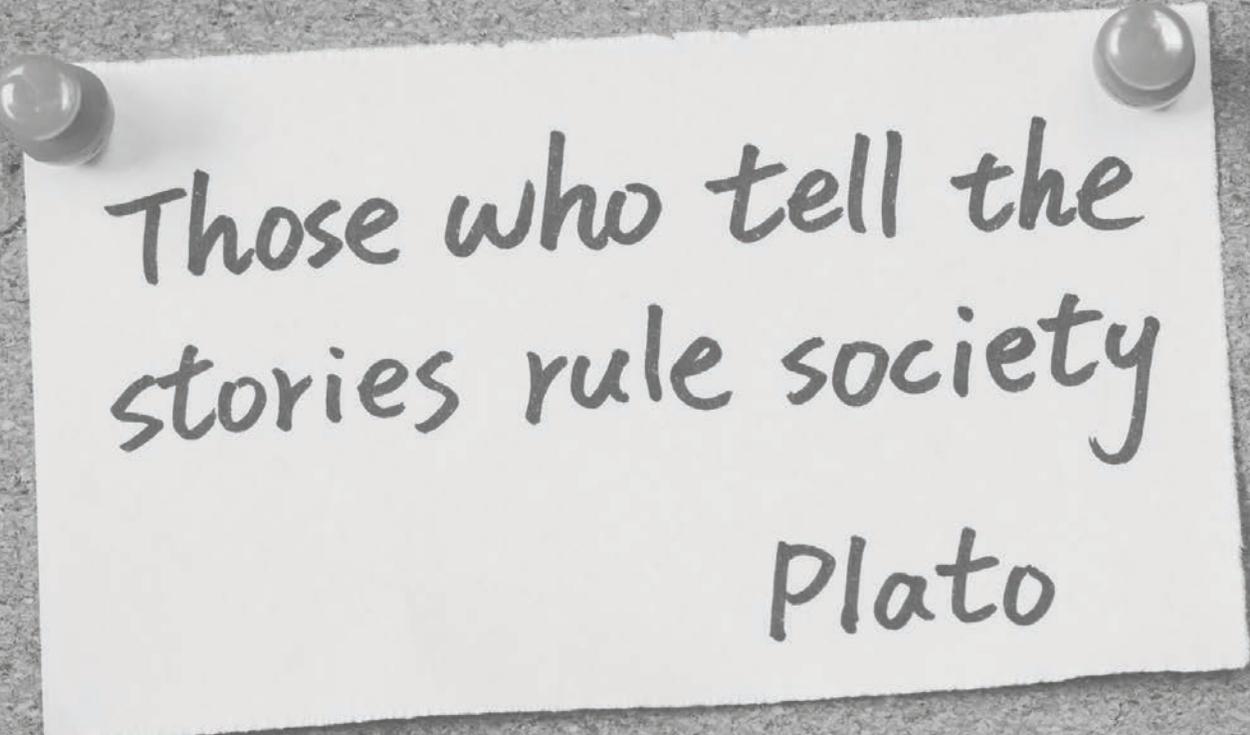
- **Background:** Information gaps and a lack of opportunities to connect stand as barriers between investors and founders in Baltimore, although other regions have found ways to break through those challenges. A two-pronged approach aims to bring people together first through a digital platform and then through a physical location that will serve as the “front door” for entrepreneurs in Baltimore.
- **Recommendation:**
  - Create a digital platform with a match-making component, allowing investors and founders to post information and find each other.
    - ▶ Start digitally to learn what the investor community cares about and who’s meeting whom. Allow those lessons to steer an expansion to those outside of Baltimore and to inform what is needed in a physical space.
    - ▶ Consider a model that allows for crowdfunding, small investors and angel investors—including non-accredited investors—to support pre-seed companies in significant ways.

- Create an in-person community for entrepreneurs, similar to a social club.
    - ▶ The community's physical space should be seen as the "front door" for entrepreneurs in Baltimore—a membership organization that benefits founders, investors, angels, portfolio companies and ecosystem supporters. (Note: Jeff Cherry and Chris Janian are working on a related project.)
  - Track impact through metrics such as how many "collisions" occur online or per square foot of space.
- **Who can carry this work forward?** Local investors, incubators and accelerators; UpSurge; leaders of existing, related efforts; real estate partners and developers; local entrepreneurial support organizations.

• **Moonshot #3: Create an investment model through which employees can receive a list of investment opportunities through their 401(k) to invest in local minority-owned businesses.**

- **Background:** United Way has an initiative whereby employers encourage employees to allocate a portion of their wages to charity through employee or workplace giving programs. Baltimore has the opportunity to extend this idea to investing in Equitech companies.
- **Recommendation:**
- Work through legal options to develop a channel through which employees can choose to invest in Baltimore-based Equitech companies or BIPOC founders when making allocations for their retirement funds.
  - Develop a series of education/awareness topics on early stage investing to be disseminated among investor groups and/or potential investors.
  - Develop a list of funds investing in BIPOC founders located in the Baltimore area.
  - Consider building this as a follow-on to Systems Change #3 or Moonshot #1.
- **Who can carry this work forward?** UpSurge; City of Baltimore; State of Maryland; Baltimore Development Corporation; legal, banking, insurance companies and investors.





Those who tell the  
stories rule society  
Plato

# Marketing & Narratives

## Background

As the Equitech vision comes to life, Baltimore will find new ways to talk about its assets and advantages. We will be known not for narratives like *The Wire*, but for a knowledge economy built on talent, hustle, and resourcefulness. Growing our innovation economy from within—through the participation of many more Baltimoreans—and attracting others to it, will require a clear narrative about the accessibility of tech-sector jobs and the unique advantages that our city offers entrepreneurs, innovators, investors and those seeking meaningful, family-sustaining opportunities. The Marketing & Narratives UpSurge Team included marketing and communications leaders from consultancies and major health insurance companies, healthcare and nonprofit institutions, a journalist, and leaders from Baltimore-focused civic institutions.

The following individuals served on the Marketing & Narratives Team.

- [Shannon Ensor](#), Senior Marketing Communications Consultant, CareFirst BlueCross (Team Lead)
- [Jamie Fontaine](#), President, Adeo Advocacy (Project Manager)
- [Kevon Paynter](#), Founder /Lead Product Manager, Bloc by Block News
- [Damian Rintelmann](#), Builder-in-Residence, Olive
- [Larry Moscow](#), Partner, Maslansky + Partners
- [Renee Beck](#), VP of Marketing/Innovation, United Way of Central Maryland
- [Robbin Lee](#), Executive Director, Baltimore Homecoming
- [Lennette Abad](#), Principal/Creative Director, Abad & Company
- [Shelonda Stokes](#), President, Downtown Partnerships of Baltimore
- [Sharon Markley Schreiber](#), COO, Economic Alliance of Greater Baltimore

## Among the questions they considered:

- What's the story we want told about Baltimore's knowledge economy in 2030? How do we get there?
- At a time when the pandemic has untethered many workers, how do we attract them to Baltimore?
- What are the best strategies to advance the Equitech vision locally? Nationally?
- What resources already exist that Baltimore can deploy? How can we align them? What else do we need?
- What can Baltimore do to support local companies through storytelling, media?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Fully engage and empower UpSurge Team members as brand ambassadors for UpSurge and Equitech.**
  - **Background:** With 200+ UpSurge Team members, we have a built-in influencer network to amplify UpSurge's work and promote awareness of Equitech as both a concept and a vision for Baltimore. In order to activate an "influencer" mindset, it's important to make sure that all Team members are educated, equipped and motivated to share the message with their networks.
  - **Recommendation:**
    - Create and disseminate a digital toolkit that allows UpSurge Team members to serve as effective brand ambassadors. This toolkit could include, but is not limited to: messaging, creative assets, best practices and guidance to take action (i.e., add a 'job' to their LinkedIn profile with UpSurge tagged as the employer).
    - Incentivize action of UpSurge Team members by creating a "major award" for the first Team to all take the directed action (something fun/silly).
    - Engage UpSurge Team members to co-create videos or other forms of content with ecosystem members outside of UpSurge Teams.
    - Create free, downloadable assets that Team members—and other stakeholders—can use to display their support of the Equitech mission. These assets might include an Equitech "seal" for their email signature, website or social media.
  - **Who can carry this work forward?** UpSurge; UpSurge Team members; company partners.

- **Quick Win #2: Support Baltimore startups in sharing and marketing their own narratives.**

- **Background:** Startups do not always have expertise in marketing their ideas and work, but the stories of Equitech companies would help to highlight the vision and demonstrate the variety of ways it exists in practice. UpSurge Team members and partners have significant expertise in marketing and PR and could help create invaluable resources that allow startups, entrepreneurs and investors to share their work more broadly.
- **Recommendation:**
  - Create a DIY marketing and PR guide for Equitech startups that would allow them to more easily manage their own marketing. Examples of resources might include a press release template, social media best practices or an SEO starter guide.
  - Offer marketing and PR consulting services for Equitech startups within an “office hours” framework. Creating mentorship opportunities allows the UpSurge Team to support the success of Equitech startups and serves to reinforce Equitech and UpSurge messaging and values.
- **Who can carry this work forward?** UpSurge; companies, consultants and individuals with expertise in marketing, PR and communications firms; local startups.

- **Quick Win #3: Secure a large-scale, prominent art installation that brings attention to Equitech.**

- **Background:** Too often, Baltimore is in the news for negative events. Imagine the energy and excitement that UpSurge could generate with a visual representation of Equitech—another way of telling the story—that garnered significant media attention.
- **Recommendation:**
  - Partner with a local university or college, such as MICA, or an artist to create a large-scale art installation that embodies Equitech.
  - Secure a prominent Baltimore location to feature the installation, and generate buzz around Equitech.
  - Activate UpSurge Team members and their networks to amplify the installation and push the story viral by taking photographs at the installation, posting on social media channels and tagging news outlets.
- **Who can carry this work forward?** UpSurge; local colleges, universities and artists; Baltimore-based art museums; Visit Baltimore; Live Baltimore; Downtown Partnership of Baltimore.

## Systems Changes:

- **Systems Change #1: Develop a long-term, actionable framework for the Equitech vision and values that positions Baltimore as the US hub for inclusive innovation and a great place to do business.**

- **Background:** Baltimore is a creative and tech hub with advantages that are often lost in the shadows of negative media coverage. Our ecosystem has an opportunity to change the narrative and scale the momentum of Equitech in a way that supports awareness, growth and engagement across the city.
- **Recommendation:**
  - Reshape the perception of Baltimore—a process that will require engaged stakeholders from every corner of the ecosystem.
  - Partner with the Mayor’s office and/or relevant city department leads to align communication efforts and action around Equitech.
  - Solicit buy-in from institutional, government, business and other partners in a coordinated, citywide Equitech initiative/campaign.
  - Capture compelling Equitech stories and share them with production companies and mainstream media.

- Engage high-profile influencers and champions to spread the message and impact of Equitech.
  - Consider opportunities to highlight Baltimore’s tech leaders and the Equitech concept through TED Talks and other similar promotional events/communication.
  - Identify unlikely partners in Baltimore’s music and cultural scenes to spread the Equitech message/campaign through events, materials, giveaways, etc.
  - Engage city institutions and businesses as partners with inspiration and tools to educate and engage their internal and external audiences about Equitech.
- **Who can carry this work forward?** UpSurge; Mayor’s Office and other city departments; local and national influencers; corporations; local colleges, universities and other institutions; local incubators and accelerators; Techstars.
- **Systems Change #2: Host an annual Equitech conference to draw attention to Baltimore’s unique and growing ecosystem.**
    - **Background:** Advancing the Equitech vision will require drawing attention—within and outside of Baltimore—to the work taking place across our city and learning from what other ecosystems are doing.
    - **Recommendation:**
      - Leverage the expertise of local incubators, accelerators, corporations, entrepreneurs and startups to conduct sessions.
      - Consider a variety of Equitech prizes to honor companies, within the ecosystem or nationally, that embody Equitech values.
      - Promote the conference globally to highlight Baltimore as the first Equitech city.
    - **Who can carry this work forward?** UpSurge; local incubators and accelerators; Visit Baltimore; Baltimore Development Corporation; City of Baltimore; corporations and startups.
  - **Systems Change #3: Create a framework for introducing Equitech to potential workforce partners and youth audiences. Establish long-term activities that intentionally support the growth of a more diverse tech workforce in Baltimore.**
    - **Background:** Amplify UpSurge’s talent pathways work with programming, events and activities that broaden awareness of and belonging to tech.
    - **Recommendation:**
      - Launch a speaker’s bureau that provides youth and other participants from workforce organizations with coaching, shaping them into effective speakers who can advocate for Equitech and Baltimore’s ecosystem.
      - Host a match day (experiential marketing), to pair students, youth or entrepreneurs with mentors who can support their venture/goals while also furthering the education and awareness of Equitech.
      - Partner with Baltimore City Public Schools to educate students and young adults about Equitech and entrepreneurship. Consider developing a toolkit to create a branded experience that teachers can use in the classroom.
      - Host an annual youth Equitech awards event, along with activities that youth can engage in throughout the year to explore and hone their interest in tech.
    - **Who can carry this work forward?** UpSurge; Baltimore City Public Schools; City of Baltimore; local corporations, startups and investors.

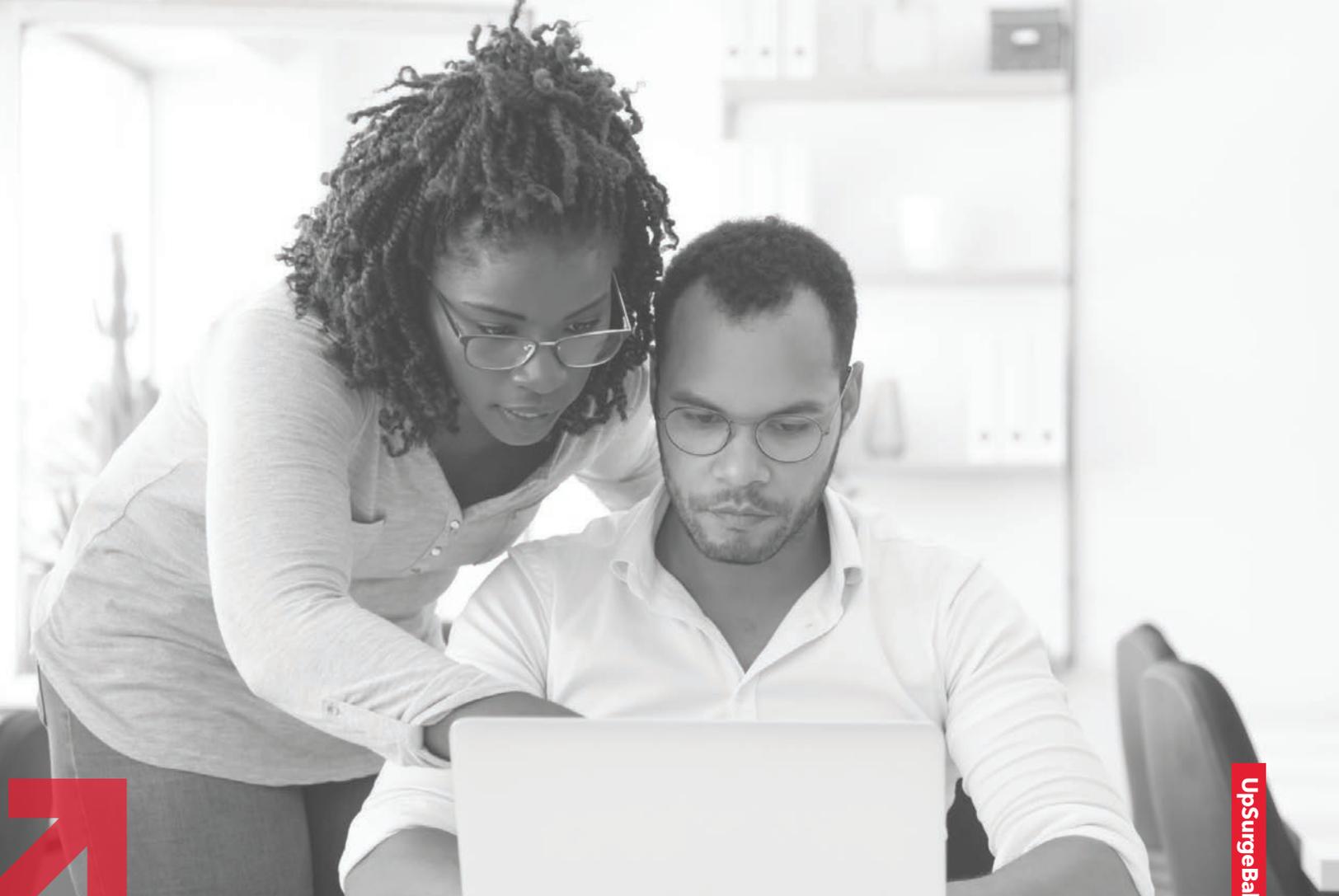
## Moonshots:

- **Moonshot #1: Ensure Baltimore's Equitech story is known within and outside of Baltimore.**

- **Background:** Focus on storytelling that could drive more impact, partnerships and opportunities. The ultimate storytelling opportunity is one that hits mainstream media and Hollywood, changing Baltimore's narrative and accelerating the Equitech vision.
- **Recommendation:**
  - Elevate compelling Equitech stories to a national level.
    - ▶ Garner mainstream media attention around Baltimore's Equitech story.
    - ▶ Deepen relationships with Hollywood/the entertainment industry to better position and pitch stories.
    - ▶ Develop relationships with local and regional media outlets to support identification and sharing of Equitech stories in Baltimore.
    - ▶ Develop an advisor network of current/former Baltimore residents in the entertainment industry to help identify opportunities.
  - Locally, leverage trusted validators and messengers to ensure Equitech is deeply integrated in communities across Baltimore.
    - ▶ Convene university, faith, community and partner organizations to share startup/tech successes that resonate deeply in Baltimore.
  - Leverage/partner with Baltimore's global companies/brands to introduce Equitech generally and "Equitech in Baltimore" specifically.
    - ▶ For example, Under Armour via brand communication and advertising.
- **Who can carry this work forward?** City of Baltimore; UpSurge; media partners; supporters in the entertainment industry; higher education, faith-based and community organizations; local entrepreneurs and founders; large corporations, such as Under Armour.

- **Moonshot #2: Promote global awareness and adoption of Equitech.**

- **Background:** The global tech industry should adopt Equitech as a platform and lens through which to understand and address existing stigma. Equitech should become a benchmark for corporate America, the framework through which companies successfully address and create more robust DEI initiatives.
- **Recommendation:**
  - Similar to the Academy Awards or the Fortune 500, brand an annual Equitech ranking of global tech companies/ecosystems.
    - ▶ Promote the ranking through an annual recognition event/conference.
  - Identify access points to global companies/brands outside of Baltimore for engagement around the Equitech vision and standards.
  - Engage with investment and VC firms to identify the most effective messaging, mediums and opportunities (along with barriers) to brand and amplify Equitech within their industries/target audiences.
- **Who can carry this work forward?** UpSurge; City of Baltimore; State of Maryland; Visit Baltimore; Baltimore Development Corporation; local startups, investment firms, and marketing partners.



# Talent Development & Pathways

## Background

To build an Equitech city, it's not enough to support diverse founders and entrepreneurs. Our long-term success depends on bolstering brilliance from every corner of Baltimore, widening the pathways into the knowledge economy, and making them clear and accessible to all. We must ensure our youth understand the tech industry as a viable career option, as well as offering upskilling programs to adult workers interested in the family-sustaining wages and benefits possible through innovation-economy jobs. Thinking through this broad landscape required a diverse Team of professionals from tech startups, higher education, training programs for students, youth and underemployed adults, and others who think regularly about carving pathways into tech.

The following individuals served on the Talent Development/Pathways Team.

- [Eliot Pearson](#), COO/CSO, Catalyte (Team Lead)
- [Ah'Riaunna Austin](#), Summer Analyst, Brown Advisory (Project Manager)
- [Markus Proctor](#), Executive Director, Innovators of Progress Scholarship Program
- [Meredith Bennett](#), Account Director, Mindgrub
- [Matthew Lowinger](#), Software Product Specialist, InVita Healthcare Technologies
- [Alia Poonawala](#), Executive Director, Hire Hopkins
- [Christopher Sachse](#), CEO, ThinklStack
- [Matthew Lim](#), Managing Partner, Techslice
- [André Keyser](#), President/CEO, Keyser Education Corporation
- [Tiffany Page-Cooper](#), Co-Founder, MyVirtualVillage
- [Micky Wolf](#), Director of Programs, Dent Education
- [Jennifer Bodensiek](#), President/CEO, Junior Achievement of Central Maryland
- [Blair Slaughter](#), Founder/CEO, Delve
- [Kathleen Weiss](#), Executive Director, BTI Works
- [Lynn Handy](#), Deputy Director, Talent for Good at Baltimore Corps
- [Eric Rozencwaig](#), Founder/Managing Partner, ESR Partners
- [Cory Anderson](#), Baltimore Community Director, Venture For America
- [Tom Hoen](#), SVP of Growth Technologies, Network For Good

## Among the questions they considered:

- At a time when many workers have been untethered by the pandemic, how do we attract them to Baltimore?
- How do we understand remote work and increased remote connectivity as an opportunity for Baltimore?
- How might we build pathways of employment to upwardly wage-mobile jobs for underestimated, under-resourced Baltimore communities?
- How will recruiting efforts need to change in order to attract, employ, and retain knowledge economy workers in the city?
- How might we reimagine upskilling and retraining programs to be more inclusive and accessible?

## Strategic Priorities/Recommendations

### Quick Wins

- **Quick Win #1: Showcase Baltimore through a marketing campaign aimed at attracting talent, particularly remote workers.**
  - **Background:** Baltimore is rich with talent, opportunity, and community. We have the opportunity to share those qualities more broadly, showcasing strengths that may not be widely known and demonstrating the potential our city offers for upward mobility.
  - **Recommendation:**
    - Create a marketing campaign to highlight the advantages of living and working in Baltimore as a way to make our city more attractive to workers, especially remote workers. The campaign could feature:
      - ▶ The sense of community, the lifestyle, the unique culture, and the access to arts and culinary opportunities.
      - ▶ Examples of entrepreneurs—particularly underestimated founders—who have launched and grown companies locally.
      - ▶ Highlights of the interconnected nature of the local ecosystem, featuring local universities, large corporations, tech-enabled startups and nonprofits.
  - **Who can carry this work forward?** UpSurge; Downtown Partnership of Baltimore; Live Baltimore; Baltimore Development Corporation; Maryland Department of Commerce; Visit Baltimore; City of Baltimore.

- **Quick Win #2: Aggregate resources to support skills development and employment.**
  - **Background:** The many resources that exist in Baltimore to support talent development and career pathways are often spread across organizations and platforms, and can be hard to find or access. The goal would be to make the resources easily accessible in one centralized location, reaching as many Baltimoreans as possible.
  - **Recommendation:**
    - Centralize knowledge economy training programs, career- and tech-readiness programs, and all worker-related opportunities in Baltimore with an easy-to-access portal for the local workforce—from youth to adults.
      - ▶ Point individuals to free or low-cost opportunities, demonstrating how workers can get from point A to point B.
      - ▶ Work with existing programs that have earned community trust and employers who will be seeking talent to identify gaps in the training landscape, and fill them.
  - **Who can carry this work forward?** College career centers; workforce development organizations; EcoMap; Fearless; UpSurge; entrepreneurial support organizations.
  
- **Quick Win #3: Encourage paid internships.**
  - **Background:** Many organizations offer internships to students as an opportunity to learn about an industry, prepare for a future career and foster interest in Baltimore. But too many of the positions are unpaid, making Baltimore less attractive for many potential interns. Consider a program like the Xtern program referenced in the UpSurge Company Attraction Team report.
  - **Recommendation:**
    - Develop a set of best practices—and share them widely—with local companies that offer internships, and advocate for their adoption, making Baltimore an attractive destination for students to come for internships.
    - Create a pool of funding from which companies could draw if they could offer meaningful internship experiences but could not afford to pay the interns.
    - Encourage companies to designate one or more mentors for each intern, allocating time for mentors to connect with students during their internships and establishing pathways for the company to remain in contact with the students after the program ends.
    - Encourage companies to follow inclusive recruiting and hiring practices when selecting interns, reaching out broadly to recruit students.
  - **Who can carry this work forward?** Baltimore Tracks; Baltimore Collegetown Network; Mayor's Office of Economic Development; Greater Baltimore Committee; UpSurge; corporations, companies, colleges and universities.
  
- **Quick Win #4: Support companies in hiring more equitably.**
  - **Background:** Companies across the country need to find better recruiting methods in order to increase diversity. Many companies, perhaps due to resources and constraints, settle for “lazy recruiting” rather than opening the aperture more broadly to pull in interest from non-traditional channels. If companies utilize the same method of recruiting—such as only posting jobs on sites like LinkedIn or Indeed—they will hire a relatively homogenous workforce.
  - **Recommendation:**
    - Offer programming to Baltimore companies, specifically their HR departments, to more equitably and fairly recruit, interview, and hire prospective employees. Resources should point individuals to free or low-cost opportunities, demonstrating how workers can get from point A to point B.
      - ▶ Create functional mentorship groups for HR executives and leaders to share best practices towards more equitable hiring practices.
      - ▶ Host workshops and/or a workshop series twice a year, prior to busy hiring periods, so that startups can implement a more equitable hiring process.

- For startups with slim budgets and no HR professionals, encourage them to join Baltimore Tracks to learn more about the strategies and best practices lean organizations can deploy to recruit, hire and retain a more diverse workforce.
  - Create and disseminate hiring resources that are made available broadly to inform company leaders on the advantages of diversity within the workplace and how they might take steps towards a more diverse employee base.
- **Who can carry this work forward?** Baltimore Tracks; Hire Hopkins; UpSurge; companies, colleges and universities.

## Systems Changes:

### • **Systems Change #1: Improve tech training for youth through year-round programs.**

- **Background:** The Baltimore City-run YouthWorks program that connects students with summer jobs can provide excellent opportunities, but too often, the jobs aren't in-depth or enduring enough to focus on solid career-related skills. Students need to be introduced to career pathways early so they clearly understand their options and can begin focusing on life skills needed in adulthood.
- **Recommendation:** Develop and fund year-long tech training programs in and outside of school, allowing students to focus on career-related skills throughout the year.
- In-school:
    - ▶ Make significant investments in computer science education for all high schools and in career centers to support students who aren't college bound.
    - ▶ Reconstruct the K-12 curriculum to better equip youth for the industries of the future, such as data science, AI, and robotics.
    - ▶ Launch partnerships with startups willing to offer job-shadowing days that provide students with a glimpse into a potential career.
  - Outside of school:
    - ▶ Develop a tech-training curriculum in partnership with local startups. Ensure the curriculum evolves so interested students can learn new skills each year.
    - ▶ Supplement curriculum with experiential learning platforms—such as CapSource—along with focused support to foster entry into tech careers.
    - ▶ Assemble a city-wide youth board to advise on students' needs and preferences, empowering youth leaders to voice necessary changes.
- **Who can carry this work forward?** Baltimore City Public Schools; Mayor's Office of Economic Development and YouthWorks; Digital Harbor Foundation; UpSurge; local startups.

### • **Systems Change #2: Provide on-ramps for more Baltimoreans to pursue in-demand tech skills, while broadening exposure to available opportunities.**

- **Background:** Critical gaps in the Baltimore workforce result from a mismatch between the skills of the current workers and the requirements of available jobs in the tech sector. Resolving this discrepancy locally will require providing more easily accessible opportunities for talented Baltimoreans to receive training in the skills needed to succeed in knowledge-economy jobs.
- **Recommendation:**
- Develop comprehensive, wraparound sector-based strategies to train and support potential knowledge economy workers from across Baltimore—particularly those from historically marginalized communities.



- Launch partnerships with organizations such as Catalyte’s RetrainAmerica to upskill current workers and de-risk their hiring.
  - Collaborate with workforce-development organizations to learn from and adapt their systems for recruitment and training (in hard and soft skills) in order to benefit more workers and point more people toward sustainable knowledge economy opportunities.
  - Create apprenticeship and paid internship programs that provide focused, on-the-job training for underutilized talent, including returning citizens.
- **Who can carry this work forward?** Mayor’s Office of Economic Development; Catalyte; Center for Urban Families; JOTF; and UpSurge.
- **Systems Change #3: Foster company engagement in local talent development.**
    - **Background:** As the potential employers of future Baltimore talent, local companies could play a vital role in both identifying the type of training workers will need in the future and in providing or helping to organize or encourage aspects of that training. This type of direct company engagement in local talent development could help build a flourishing job market.
    - **Recommendation:**
      - Develop and fund year-long tech training programs in and outside of school, allowing students to focus on career-related skills throughout the year.
      - Connect companies that have a track record of talent development with others across the ecosystem to foster the adoption of local best practices.
      - Create an easy-to-access resource that provides all necessary information about training programs, upskilling programs, apprenticeship models, tax incentives and other resources and requirements for participating in them.
      - Provide companies with tax incentives for hiring local workers and for developing apprenticeship programs.
      - Encourage companies to focus efforts locally—even creating partnerships with specific schools or talent development organizations.
    - **Who can carry this work forward?** City of Baltimore; Baltimore City Public Schools; UpSurge; local talent development organizations; local startups.

## Moonshots:

- **Moonshot #1: "Universal basic tech" for every resident.**
  - **Background:** In Baltimore, too many people do not have access to basic technology because they cannot access or afford it. Without basic technology—including broadband internet and a device on which to use it—the knowledge economy and the opportunities it affords are largely out of reach.
  - **Recommendation:**
    - Support efforts to provide “universal basic tech” through three channels:
      - ▶ Universal access to affordable, high-speed, broadband internet in every community across Baltimore City.
      - ▶ The provision of a smartphone, laptop, or tablet, for those who need one to ensure everyone has access to the technologies that drive society today at their fingertips.
      - ▶ Easy-to-access training that teaches people how to make the most of available technologies, offered at various levels of experience.
  - **Who can carry this work forward?** Baltimore Digital Equity Coalition; City of Baltimore; UpSurge; Digital Harbor Foundation; talent development organizations; philanthropies.

- **Moonshot #2: “Cracked the code” best prepped high school tech grads.**

- **Background:** Most Baltimore City Public Schools do not have the equipment or instructors to train students in ways that prepare them for careers in the tech economy. We should cultivate interest in tech from a young age, opening new opportunities for Baltimore City students to envision tech careers and see the pathways to achieve them.
- **Recommendation:** To ignite and harness students’ passion for technology, launch more tech-focused programs (in and outside of school) that encourage students to see the knowledge economy as a viable path.
  - Deploy mobile STEM labs—portable classrooms that can provide students with early access to robotics, 3D printing, flight simulators, etc.—to introduce students to advanced technologies and possible STEM-related careers.
  - Create easily accessible innovation labs that are open to all students, with a particular focus on those in middle and high school.
  - Launch high school venture incubators or accelerators to support the entrepreneurial ambitions of Baltimore’s young people.
- **Who can carry this work forward?** Baltimore City Public Schools; Digital Harbor Foundation; UpSurge; ESOs; philanthropies.



# Next Steps

In this report, the UpSurge Teams outlined a bold and ambitious vision that reaches from the upper echelons of corporate America to elementary school classrooms in Baltimore's neighborhood schools. Our success over the next decade will depend on how quickly and thoroughly we can bring that vision to life.

As mentioned in previous sections, we didn't wait to get started. With partners, UpSurge is building momentum around key priorities—supporting and building networks for Baltimore startups; launching two new Equitech-focused accelerators in Baltimore; assembling resources to make them accessible to founders, companies and budding entrepreneurs; building out formal and informal networks across the ecosystem in ways that foster connection; and developing new channels through which to showcase our city and the talent within it.

As we consider how to move the Teams' priorities from ideas into action, we will enlist support from across the ecosystem. Specifically:

- We will share a tailored version of the report with each partner named as a potential collaborator within the recommendations and talk through the best next steps.
- We will connect with City and State leadership to align these recommendations with their goals and priorities.
- We will develop a specific set of priorities around the work that UpSurge can lead or carry forward on its own, articulating goals and clear metrics to measure our progress.
- We will continue convening interested partners—starting with the members of the UpSurge Teams—to build the coalitions needed to attain our goals.

It will take all of us to build Baltimore into the country's first Equitech city. It's time to get to work.



# Appreciation

Building a movement starts with a group of true believers—people who ignite the effort and carry it forward as it grows. For UpSurge, this group started with supporters who provided not only the financial underpinning for our work, but also access to talent and resources that built our early momentum.

Last spring, just a few months after launching UpSurge, we put out a call for others to join, recognizing the need to tap the talent and expertise of our own community. We were overwhelmed by the number of people who raised their hands to be part of the effort and then thrilled to watch them engage thoughtfully with provocative ideas and with each other. The results of that engagement are clear in this report and in the increasing connections across our ecosystem.

The release of this report is just a start. The real work is ahead, and we look forward to tackling the challenges and opportunities outlined with growing coalitions of people and organizations who share our belief in Baltimore and in the potential of Equitech.

We are particularly grateful to those organizations that joined us early, enabling us to launch UpSurge and set our sights high. They are:

- Brown Advisory
- Point Field Partners
- Abell Foundation
- Continental Realty
- Fancy Hill Foundation
- Greenspring Associates
- Johns Hopkins University and Medicine
- T. Rowe Price
- Towson University
- University of Maryland, Baltimore
- Whiting-Turner



# Appendix

# UpSurge Teams

**UpSurge Teams drive our work through expertise, experience & vision.**

We're so grateful for their energy, intelligence, and commitment to Baltimore.

## ClimateTech

- **Claire Broido Johnson**, Managing Director, Maryland Momentum Fund\*
- **Cyrus Etemad-Moghadam**, President & Founder, RPM Tech
- **Joshua Goldberg**, Co-Founder, Legends of Learning
- **Brian Hasselfeld**, Medical Director, Digital Health
- **Lynn Heller**, CEO, Climate Access Fund Corporation
- **Joe James**, President, ATP-MD
- **Mike Kirby**, CEO, Lumina Solar
- **Glen Schatz**, CRO, BlocPower
- **Brian Toll**, Director, Maryland Energy Innovation Accelerator
- **Adam Van Dyke**, Principal, Early Charm Ventures
- **Ben Zaitchik**, Government Information Specialist, Freedom of Information Act and Privacy Act Division, US Department of State

## Company Attraction & Retention

- **Franklyn Baker**, President & CEO, United Way of Central Maryland
- **Christopher College**, Managing Partner, TCP Venture Capital
- **Ben Craig**, Fiber Network Consultant, Crown Castle
- **Aaron Hsu**, Co-Founder & CEO, ClearMask
- **Patrick McQuown**, Executive Director - Entrepreneurship, Towson University\*
- **Tom Sadowski**, Vice Chancellor for Economic Development, University System of Maryland
- **Matthew Wyskiel**, Owner & Founder, Skill Capital Management

## ConsumerTech

- **Paris Brown**, Founder, African American Shopping Network
- **Lisa Friedlander**, Head of Marketing & Business Development, NEXT powered by Shulman Rogers
- **Jon Ilani**, Administrative Fellow, Cedars Sinai Comprehensive Transplant Center/ MBA student, Johns Hopkins University
- **Keilah Jacques**, CEO, Kei-Impact Group
- **Paul Levine**, Retired, President, retail consultant, nonprofit development, fundraising consultant, owner
- **Brian Razzaque**, Founder & Interim CEO, SocialToaster
- **LaToya Staten**, Strategic Projects Specialist, Fearless\*
- **Shanna Tellerman**, Founder & CEO, Mody

## Corporate Partnerships

- **Zachary Garber**, VP, Alex Brown/ Founder, Charm City Dreamers
- **Frank Glover**, Former Senior Director, Venture Funds, TEDCO\*
- **Dana Ledyard**, VP, Strategy, Catalyte
- **Madison Marks**, Director, Social Innovation Lab
- **Jenny Owens**, Assistant Dean, University of Baltimore
- **Trevor Pryce**, Principal, Outlook Company
- **Matthew Reeds**, Executive Director, ReedsFund
- **Scott Robertson**, Account Director, Year Up

## Cybersecurity

- **Tasha Cornish**, Executive Director, Cybersecurity Association of Maryland\*
- **Justin Label**, Managing Partner, Inner Loop Capital
- **Travis Sachse**, CFO, Think I Stack
- **Willie Sanders, Jr.**, Clinical Associate Professor, Computer Science, Towson University
- **Maria Vachino**, President, Calvert Consulting
- **Ben Vezzani**, Staff Software Engineer, Walmart Global Tech
- **Megan Wahler**, Operations Lead, Cresting Wave\*

## Data & AI

- **Karl Cadet**, Co-Founder & CEO, Bodha
- **Tracey Halvorsen**, Co-Founder & Chief Experience Officer, Return Solutions
- **Jerrold Jackson**, Head of Machine Learning & Data, EXOS
- **Bill Karpovich**, Founder, CoFactor Ventures
- **Isaac Kinde**, Co-Founder, VP Technology Assessment & Baltimore Site-Head, Thrive
- **Pava LaPere**, Founder & CEO, EcoMap Technologies
- **Ahmad Namini**, Professor, Brandeis University
- **Onyema Osuagwu**, Professor, Morgan State University\*
- **Dan Roche**, Executive Chairman & Founder, Qualytics

## Digital Equity

- **John Brown**, Business Development Executive
- **Amalia Deloney**, VP, Robert W. Deutsch Foundation\*
- **Jason Hardebeck**, Director of Broadband & Digital Equity, City of Baltimore
- **Kelly Hodge-Williams**, Director of Development & Partnerships, PCs for People Maryland
- **LaRon Martin**, Co-Founder, The Virtual Village
- **Jonathan Moore**, Founder & CEO, RowdyOrb.it
- **Kendra Parlock**, Executive Director, NPower Maryland

## Digital Health

- **Adler Archer**, CEO, Adloris
- **Emily Durfee**, Healthworx Hub Manager, Healthworx, CareFirst
- **Kevin Keenahan**, Co-Founder & CEO, Tissue Analytics (acquired by Net Health)
- **Mark Kominsky**, Program Director, Chesapeake Digital Health Exchange, Johns Hopkins
- **Simon Matthews**, Chief Medical Officer, Vivante Health/ Assistant Professor, Johns Hopkins Medicine
- **Anna Millhiser**, VP, Hospital Solutions and Client Success, Doximity
- **Aaron Reichel**, Social Worker (LCSW-C) – Therapist, Social Entrepreneur, Breakthrough Counseling & Consulting
- **Galen Shi**, Founder & Managing Director, WeGo Foundation
- **Brian Spray**, Director of IT Services, UC Davis/CNPRC
- **Kristen Valdes**, CEO, b.well Connected Health\*
- **Ellington West**, CEO, Sonavi

## Food & FoodTech

- **Derek Battle**, Co-Founder, Flave
- **Carlos Bello**, Venture Associate, Squadra Ventures
- **Jal Irani**, Co-Founder, Flave
- **Evan Lutz**, CEO & Founder, Hungry Harvest
- **Ellis McCue**, CEO, Territory Foods
- **Emily Miller**, Business Development Manager, SIMPLi
- **Kathleen Overman**, Director of Connection, Cureate\*

## Government & Policy

- **Michael Castagnola**, Chief of Staff, SmartLogic\*
- **Jennifer Curran**
- **Daniel Goetzl**, Executive Director & Corporate Partnerships, Columbia University-Cyber NYC Investors to Founders
- **Dana Johns**, Senior Portfolio Manager, Maryland State Retirement System\*
- **Ganesha Martin**, President, GMM Consulting
- **Kamaria Massey**, Research Assistant, Morgan State University
- **Wes Moore**, Former CEO, Robin Hood Foundation

- **Monica Nimmagadda**, Special Assistant to the Housing Commissioner, City of Baltimore
- **Omowunmi Oni-Dandridge**, Owner/Fashion Designer, OND Vintage
- **Katherine Schulze**, General Counsel and Chief Ethics Officer, Ethics Alliance Maryland
- **Alphia Stephens**, Director of Quality, Moser Consulting

## Inclusive Entrepreneurship

- **Stephen Auvil**, Chief Program Operations Officer, Maryland TEDCO
- **Devon Corbin**, Associate Director of Corporate Engagement, Year Up
- **Phil Croskey, CEO, Maryland Energy Advisors\***
- **Terence Dickson**, Owner, Terra Loft Consulting / Bamboo Project
- **Jeffrey Griffin**, Executive Director, Franciscan Center
- **Kimberly Harrison**, CEO, Dreamers Learning Center
- **Anne Hilb**, Founder, Graymake
- **Bernette Jones**, Founder/Owner, Consciousness Agency: Conscious Life Design Systems
- **Peter Metsopoulos**, Director of Leadership & Entrepreneurship Institute, Roland Park Country School
- **Marianna Pappas**, Program Director, Conscious Venture Labs
- **Rajan Patel**, Co-Founder, CEO, Dent Education
- **Lindsay Ryan**, Venture Development Director, University System of Maryland
- **Emma Simpson**, Baltimore Community Director & Director of Strategic Partnerships, Venture for America
- **Emily Sullivan**, UX Designer

## Investor & Capital Attraction

- **Josh Ambrose**, Director of Student Ventures, Fast Forward U/JHU
- **Moss Amer**, Director, Corporate Application, Audacious Inquiry
- **Greg Cangialosi**, Managing Partner, Olive Ventures
- **Jeff Cherry**, Managing Partner, Conscious Venture Partners
- **McKeever "Mac" Conwell**, Managing Partner, RareBreed Ventures\*
- **John Davis**, General Partner, Domaine Precious Metals Partners
- **Nick Duafala**, Managing Partner, SoFin Ventures
- **Matthew Hellauer**, Managing Partner, PTX Capital
- **Elise Liberto**, Principal, Brown Advisory
- **Melanie Mendoza**, Founder, MHM Consulting
- **Jeff Musgrove**, Managing Partner-VC/PE/Family Office Advisory Services, Think Systems
- **Eileen O'Rourke**, Chief Financial Officer, The Abell Foundation\*
- **Ben Seigel**, Principal, Economic Mobility Consultants
- **Ryland Sumner**, President, Point Field Partners

## Life Sciences

- **Timothy Fawcett**, Scientific Director, Biotechnical Institute of Maryland
- **Nao Gamo**, Founder & CEO, NeuroSonics Medical
- **Justin Hanes**, Founder, Theraly Diabetes
- **Adam Kronk**, Principal, UMB
- **Bruce Lichorowic**, CEO, Galen Robotics
- **Helen Montag**, Senior Director of Ecosystem Development, Johns Hopkins Tech Ventures
- **Mary Morris**, Director, Baltimore Fund, University of Maryland, Baltimore\*
- **Kimberly Noonan**, Founder, EVP, CS & TO, WindMIL Therapeutics
- **Chandra Ramanathan**, Global Head, R&D Open Innovation, Bayer

## Marketing & Narratives

- **Lennette Abad**, Principal, Abad & Company
- **Renee Beck**, Associate VP, Marketing, United Way of Central Maryland
- **Shannon Ensor**, Senior Marketing Communications Consultant\*
- **Robbin Lee**, Executive Director, Baltimore Homecoming
- **Larry Moscow**, Partner, malansky+partners
- **Kevon Paynter**, CEO, Product Manager, Founder, Bloc By Block News
- **Damian Rintelmann**, Builder-In-Residence, Olive AI
- **Shelonda Stokes**, President, Downtown Partnership of Baltimore

## Real Estate

- **Amy Bonitz**, Managing Partner, Anthem Communities
- **Tyrell Dixon**, Co-Founder, Project Own
- **Treva Ghattas**, Sales, Murphy Commercial Real Estate
- **Peter Jackson**, VP, JLL\*
- **Chris Janian**, President, Vitruvius
- **Lisa Kaufman**, Head of Global Securities, Portfolio Manager, LaSalle Investment Management
- **Katherine Pinkard**, President, Pinkard Properties
- **Adam Rhoades-Brown**, Development Director, Cross Street Partners\*
- **Jane Shaab**, Associate Vice President, UMB/ Senior Vice President and Executive Director, UM BioPark
- **Bill Struever**, Principal, Managing Partner, CEO, Cross Street Partners
- **Jayson Williams**, President & CEO, Mayson-Dixon Companies

## Specialty & Advanced Manufacturing

- **Josh Barnes**, COO & Owner, Harbor Designs & Manufacturing LLC\*
- **Ken Malone**, Executive Officer, Early Charm Ventures
- **Ronald Williams**, Assistant Professor and Founding Director of the Center for Strategic Entrepreneurship, Coppin State University
- **Bruce Lichorowic**, President & CEO, Galen Robotics Inc.
- **Mike Galiazzo**, President, Regional Manufacturing Institute of Maryland
- **Hugh Evans**, board member, various companies
- **Bob Welsh**, Vice President of Technology and Open Innovation & Chief of Staff for CTO, Stanley Black & Decker

## Talent Development & Pathways

- **Cory Anderson**, Baltimore Community Manager, Venture for America
- **Meredith Bennett**, Account Director/DEI Chair, Mindgrub Technologies
- **Jennifer Bodensiek**, President & CEO, Junior Achievement of Central Maryland
- **Lynn Handy**, Deputy Director, Talent for Good, Baltimore Corps
- **Tom Hoen**, SVP Growth Technology, Network for Good /Founder & President, ClassroomParent
- **Andre Keyser**, President & CEO, Keyser Education Corporation
- **Matthew Lim**, Managing Partner, TechSlice
- **Matthew Lowinger**, Software Product Specialist, InVita Healthcare Technologies
- **Tiffany Page-Cooper**, Co-Founder, Virtual Village Learning Support Services Center
- **Eliot Pearson**, COO, Catalyte\*
- **Alia Poonawala**, Executive Director, Hire Hopkins
- **Markus Proctor**, Executive Director, Innovators of Progress
- **Christopher Sachse**, CEO & Founder, Think I Stack
- **Blair Slaughter**, Founder & CEO, Delve Consulting
- **Kathleen Weiss**, Interim Executive Director, BioTechnical Institute of MD
- **Micky Wolf**, Director of Programs, Dent Education

## Veteran & Intelligence Communities

- **Nick Culbertson**, CEO, Protenus\*
- **Mike Leffer**, Principal, Early Light Ventures\*
- **Jen Pilcher**, Founder & CEO, Strategic Military Communications
- **Vivian Richards**, Founder & CEO, Vitalverse Corporation
- **Bryan Schnitker**, Capture Manager, VetsEZ
- **Alexander Shaw**, Data Scientist, RedShred
- **Marcus Startzel**, CEO, Whitebox

\*Team Lead(s)

# Articles that Supported Team Discussions

## ClimateTech

- [Making Baltimore a CleanTech Hub](#): Baltimore Sun
- [Exelon: Climate Tech investment](#): Technical.ly
- [The Tech Some Countries are Betting on to Reach New Climate Goals](#): The Verge
- [The Next Generation of Climate Innovation](#): BCG
- [SOSV ClimateTech 100](#): SOSV (TechCrunch "extra" on that list)
- [6 Innovate Ways to Fund Climate Action and Equity in US Cities](#): World Resource Institute
- [Diversity in ClimateTech](#): Cornell

## Company Attraction & Retention

- [How to attract startups and tech companies to a city without relying on tax breaks](#): Harvard Business Review
- [How state and local governments win at attracting companies](#): McKinsey
- [How local governments can attract companies that will help keep their economies afloat during COVID-19](#): The Conversation
- [Savannah offering tech workers incentives to relocate](#): Forbes
- [Why attracting startups is more important now than ever](#): FDI Center
- [Want to make your city a startup hub? You'll need to befriend 25 founders, 8 investors, and 10 experts first](#): Inc.
- [Seeing like a city: how tech became urban](#): Sharon Zukin
- [Diversity efforts in companies](#): Harvard Business Review

## Consumer

- [The Future of Consumer Tech](#): Penn Today
- [What is Consumer tech?](#): Built In
- [Investing in diverse consumer tech founders](#): Consumer Technology Association
- Trends from CES 2021: [Inc.com](#), [ASME](#)
- [Ten Hot Consumer Trends 2030](#): Ericsson
- [The Future of Consumer Markets](#): PWC
- Diversity of Consumer Tech sector: [PWC/CTA 2019](#) (See Table 5 & Appendix D in report)

## Corporate Partnerships

- [The Future of Corporate Partnerships](#): Good Innovation (UK)
- [How CEOs can advance racial equity in their regional economies](#): Brookings
- [Collaborations Between Corporates and Startups](#): McKinsey & Co.
- [The Two Ways for Startups and Corporations to Partner](#): Harvard Business Review
- [A Framework for Deep Tech Collaboration](#): BCG
- [Advancing Racial Equity Through Innovative Cross-Sector Partnerships](#): Forbes

## Cybersecurity

- [A true Cyber innovation hub](#): Economic Alliance of Greater Baltimore
- [What's driving Maryland's Cyber industry](#): Technical.ly
- [Are we waiting for everyone to get hacked?](#): NYT
- Cyber efforts in other cities: [Cyber NYC](#); [San Diego](#)
- [How to address the lack of diversity in cybersecurity](#): Forbes
- [What is the future of cybersecurity](#): Tech Radar

## Data/AI

- [Artificial Intelligence and the Future of Work](#): MIT
- [Competing in the Age of AI](#): Harvard Business Review
- [The new AI innovation equation](#): IBM
- [Four Ways AI and Machine Learning will Drive Future Innovation and Change](#): Forbes
- [The future of A.I.](#): 4 big things to watch for in the next few years: Digital Trends
- [Diversity and AI](#): VentureBeat
- [Lack of Diversity in AI](#): The Guardian

## Digital Equity

- [Achieving Digital Equity in Baltimore](#): JHU 21st Century Cities
- [Digital Equity Action Plan](#): City of Seattle
- [Verizon FIOS Coverage Map](#): Verizon
- [Building a Digitally Resilient Workforce](#): DigitalUS
- [Bridging the digital divide through digital equity offices](#): Brookings
- [To Bridge the Digital Divide, Cities Tap Their Own Infrastructure](#): Bloomberg CityLab

## Digital Health

- [Greater Baltimore's digital health sector](#): Economic Alliance of Greater Baltimore
- [How to narrow the digital divide in U.S. health care?](#): Harvard Business Review
- [What the pandemic means for health care's digital transformation](#): HBR
- [Digital transformation in health care can be fixed](#): BCG
- [New survey establishes a data-driven baseline for diversity in digital health](#): Stat
- [Scott Becker on digital health & investing \(podcast\)](#): Becker's Hospital Review

## Food & FoodTech

- [Future FoodTech Hubs - Who's Next?](#): Foodhack
- [Top 10 Food Trends of 2021](#): Food Technology Magazine
- [Here are four food tech trends that will still be trending in 2021](#): Forbes
- [Promoting food equity during COVID](#): Teachers College, Columbia University
- [Baltimore's food incubators](#): Baltimore Business Journal
- [Women launch new food fund to invest in diverse founders](#): Women in Agriculture

## Government & Policy

- [\*Unlocking the Potential of Post-Industrial Cities\*](#) (book excerpt)
- [\*Paying remote workers to relocate\*](#): Bloomberg
- [\*How Austin's Start-up Sector Won the Pandemic\*](#): Texas Monthly
- [\*How tax incentives can power more equitable, inclusive growth\*](#): Brookings
- [\*How to Attract Startups and Tech Companies to a City without Relying on Tax Breaks\*](#): Harvard Business Review
- [\*Building Back? Richard Florida Outlines His Vision for a Post-Pandemic City\*](#): The Architect's Newspaper
- [\*New Narratives and Policy for Diverse Entrepreneurship\*](#): MIT

## Inclusive Entrepreneurship

- [\*Minority Tech Startups in Tech have Seen Almost No Progress\*](#): Computer World
- [\*To Fuel Inclusive Entrepreneurship, Give Communities a Voice\*](#): Entrepreneur
- [\*Inclusive Entrepreneurship: A Roadmap for a More Equitable Future\*](#): NASDAQ
- [\*Corporate investors hold the key to fostering inclusive entrepreneurship\*](#): World Economic Forum
- [\*Four Cities' Efforts towards More Inclusive Entrepreneurship\*](#): Urban Institute
- [\*How to elevate an inclusive community of entrepreneurs\*](#): MIT Sloan
- [\*Inclusive Entrepreneurship\*](#): OECD
- [\*Inclusive Entrepreneurship Driven by Innovation & Collaboration\*](#): United Nations
- [\*Race/ethnicity, place, and art and culture entrepreneurship in underserved communities\*](#): Qingfang Wang, Lyneir Richardson

## Investor & Capital Attraction

- Financing Baltimore's Growth (series): Johns Hopkins 21st Century Cities
  - [\*Venture Capital Support for Small Companies\*](#)
  - [\*Strengthening Lending to Small Businesses\*](#)
  - [\*Measuring Small Companies' Access to Capital\*](#)
- [\*Abell Foundation's Embry says Demand for Startup Capital Outstrips Supply\*](#): Baltimore Business Journal
- [\*Silicon Valley's Share of VC Dropping\*](#): CNBC
- [\*To Back Diverse Entrepreneurs, Keep These Six Things In Mind\*](#): MIT
- [\*VCs Guide to investing in Black Founders\*](#): HBR
- [\*Who's funding Black Founders?\*](#): Crunchbase
- [\*Black VCs Confront Silicon Valley's Quiet Racism\*](#): Bloomberg

## Life Sciences

- [The Future of Life Sciences is Convergence](#): Deloitte
- [2020 U.S. Life Sciences Real Estate Outlook](#): JLL
- [Life Sciences 2020 \(Baltimore\)](#): Cushman & Wakefield
- [Clusterluck](#) (a history of life sciences in Boston): The Economist
- [First Annual Report on Diversity & Inclusion](#): BIO
- [Biotech Company moves to Baltimore](#): TrialSite News
- [Top BioPharma Clusters](#): Gen Eng News
- [Diversity in life sciences](#), with quote from Freeman Hrabowski

## Marketing & Narratives

- [Branding your Startup Ecosystem](#): Medium
- [Using Storytelling in Ecosystem Building](#): Medium
- [Primal Branding - Patrick Hanlon](#): TEDxEI Paso
- [How Austin's Start-Up Ecosystem Won the Pandemic](#): Texas Monthly
- [Why the Public's Love Affair with Silicon Valley Might Be Over](#): Fast Company
- [Every Company Needs a Narrative](#): Harvard Business Review

## Real Estate

- [Innovations in real estate to attract tech talent](#): TechCrunch
- Walbrook Junction crowd raise: [Baltimore Sun](#), [Forbes](#)
- [Blockchain in Commercial Real Estate](#): Deloitte
- [Democratizing Ownership: How the Future of Real Estate Investing is in Tokenization](#): Nasdaq/IOTA Foundation
- [Diversity in commercial real estate](#): Fast Company
- [How resident-led advocacy in Rochester, N.Y. is creating a more playful city](#): Brookings

## Specialty & Advanced Manufacturing

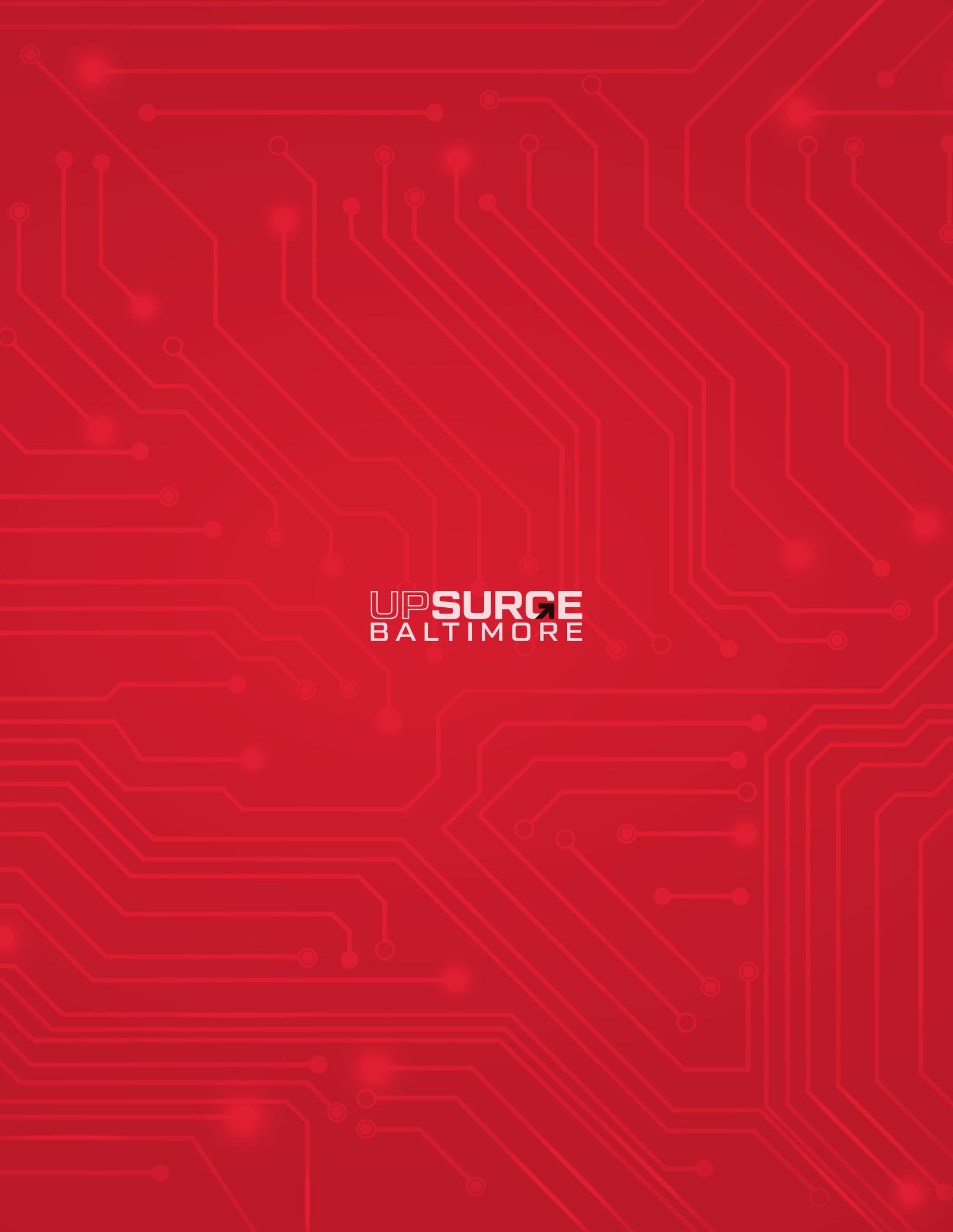
- [Work of the Future](#): MIT
- [Factories of the Future](#): Technology, Skills, and Digital Innovation at Large Manufacturing Firms: MIT
- [2021 Manufacturing Industry Outlook](#): Deloitte
- [Creating Pathways for Tomorrow's Workforce Today](#): Deloitte
- [Impact of Manufacturing Decline on Black Workers](#): Vox
- [Revitalizing Manufacturing in Chicago](#): The Century Foundation

## Talent Development & Pathways

- [Increasing Diversity in Tech](#): HBR
- [Where to Find and Recruit Black Tech Talent](#): ComputerWorld
- [Cognitive Science as a New People Science for the Future of Work](#): MIT
- [Workers Are Gaining Leverage Over Employers Right Before Our Eyes](#): New York Times
- [Democratizing Talent Development](#): Fuel50
- [The labor market doesn't have a 'skills gap' - it has an opportunity gap](#): Brookings
- [Inside Tulsa's forward-thinking talent attraction game](#): City Monitor
- [2021 Recruiting Trends Shaped by the Pandemic](#): Society for Human Resource Management
- [The City of the Future: Walkable, Mid-Sized and Built for Flexible Work](#): Forbes
- [What your future employees want most](#): Harvard Business Review

## Veteran & Intelligence Community Entrepreneurs

- [Veteran Entrepreneurs Advancing Startup Culture](#): Clearance Jobs
- [Why Entrepreneurship Works for the Military Community](#): Medium (by Jen Pilcher!)
- [Mission Critical](#): Why the American Economy Needs Veteran Entrepreneurs: Endeavor Insight and Google for Startups
- [Half of WWII's Veterans Started Businesses. Less than 5% of Today's Veterans Do](#): Slate
- [The Colorado Town Where Military Veterans Are Launching Startups as Their Second Acts](#): Inc.

The background is a solid red color with a white circuit board pattern. The pattern consists of various lines, right-angle turns, and small circles representing components or vias, creating a complex, maze-like structure. The text is centered in the middle of the image.

**UPSURGE**  
**BALTIMORE**