A PERSPECTIVE ON BALTIMORE'S STARTUP ECOSYSTEM IN

2022

COMPANIES | CAPITAL | INDUSTRIES | INVESTORS

Prepared by UpSurge Baltimore in April 2022

UPSURGE BALTIMORE

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Dear friend of UpSurge,

Throughout history, periods of global upheaval have driven both devastation and transformation. At a local level, the COVID crisis has been a binary force for Baltimore. When UpSurge launched last spring, we were in the midst of yet another COVID spike, and too many families across the city were losing loved ones or suffering other harms because of the crisis.

We also launched into a period of unprecedented change. We saw a workforce untethered from workplaces, the rise of telemedicine, and a deepening recognition of the persistent racial and gender disparities that exist in the US innovation economy. It was also a year in which the stock and housing markets roared, US venture investment nearly doubled and, right here at home, Baltimore's innovation economy smashed records. The record year highlighted the very real opportunity that exists for cities like Baltimore - if we can lean into the momentum of 2021.

What does that mean? From our perspective, it means equitably expanding the infrastructure to support founders in Baltimore - with capital, networks, talent and expertise. Growing from within our city, and attracting companies, founders and workers from elsewhere. Getting money off the sidelines to invest in our startups and our venture/ PE funds and angel groups. Keeping more talented young people in Baltimore when they graduate from our colleges, and providing on-ramps into tech for all Baltimoreans that want them. As a city, we can't pick just one path to progress; we need all of the gears turning together if we want to drive progress at scale.

To do that, UpSurge works alongside partners across the city, region, state and country – leading or partnering to support initiatives led by others. Our work is always anchored by four key objectives of our 10-year vision. We aim to:

1. Define Baltimore's place alongside the world's leading innovation cities, where gamechanging companies launch, scale and thrive.

2. Build on the growing momentum in Baltimore tech to become the country's first Equitech city, where all companies embrace the value of diversity as a force multiplier and underestimated founders find fertile ground for growth – building the country's first truly inclusive tech economy.

3. Become a center of excellence for technologies - from healthcare to AI, to fintech to web3 - that can break down barriers to equity.

4. Build on-ramps for Baltimoreans from across our city into the knowledge economy, creating pathways of opportunity into good jobs and family advancement.

Anchored in the Community

One of the surprises of the past year is how quickly this 10-year vision has taken root, inspiring others in Baltimore and beyond. **In December, for example, Technical.ly named UpSurge the "Tech Community Leader of the Year" for Baltimore and the five-market region, which includes cities we admire, such as Pittsburgh, Philadelphia and DC.**

This momentum is about far more than UpSurge. Before launching last April, we spent six months diving deep into the experiences of the world's leading brain hubs, while considering a new path, one that built on our strengths, and responded to the assets, needs and brilliance of our city. When it was time to turn the vision into action, we turned to Baltimore. With input from partners across the city, we defined UpSurge's six core workstreams:

- **Startups:** Support Baltimore founders with right-time support as they launch and scale. Draw on Baltimore's rich assets to attract new startups and pursue strategies to grow at scale – such as the UpSurge partnership with Techstars.

- **Capital:** Build out the full continuum of capital from grants and non-dilutive funding to angel to late-stage.

- **Connection:** Build bridges within and across local and national startup communities, reinforcing our collective responsibility to one another.

- **Talent:** Work with training programs, colleges and universities to grow the pool of tech talent at every level. Develop a marketing engine to attract new talent.

- **Pathways:** Build pathways and on-ramps into tech for Baltimoreans across the city.

- **Storytelling:** Share compelling and authentic Baltimore Tech stories at home and across the country, as we do each week on social media and through the bi-weekly UpShot newsletter.

If these workstreams defined "what" UpSurge was working to accomplish, we spent our first year seeking the community's guidance about "how." In 2021, more than 200 volunteers from tech, industry, community and academia raised their hands to participate on UpSurge Teams, a months-long process to develop strategies to advance the Equitech vision. The resulting Equitech 2030 report offers more than 150 strategic recommendations – some for UpSurge to lead, but most requiring the leadership of partners across Baltimore and Maryland.

We've already acted on many of the most recommended strategies, like the need for a portal to bring the whole tech community together. In January, with partners Fearless and Ecomap,we launched BMoreTech Connect as a central space for conversations, resources, information, and events.

Accountability is key to our work, and we brought in a local firm, Endeavor TBD, to build a dashboard of all 152 strategic recommendations so we can track Baltimore's progress over time. Together, we will celebrate our wins, evaluate our challenges, and identify areas that need more collective attention. We expect the dashboard to be live early this summer.

We've got mojo

Ever cheerleaders for local success, we also celebrated wide-ranging wins across the ecosystem throughout our first year. Our city is now home to 261 funded startups, up 36% since last year, and they raised an eye-popping $825 million last year, up 161% over 2020's total. That total far exceeds the amounts raised in cities – such as Detroit or Pittsburgh – to which we're often compared. Baltimore saw seven deals greater than $100 million in the past twelve months, compared to only one in the prior five years from 2016-2020. Johns Hopkins reported that over $1 billion was invested in its full (not all Baltimore based) portfolio of startups over the last fiscal year — a more than 10-fold jump from just six years ago. Towson University entered the nation's premier college entrepreneurship competition for the first time, and was the only school in the Baltimore-Washington region to have a finalist – in fact, two – among the 25 selected from across the country.

We're a long way from equity, but there is progress. Black-led investment funds like RareBreed, Conscious Venture Lab and BearWay Capital are raising funding and visibility for underestimated entrepreneurs. The company-led group Baltimore Tracks is supporting local tech companies' commitments to new practices related to inclusive hiring. Techstars inaugural Equitech Accelerator graduated 11 companies, all of which were led by diverse co-founders – and at least three of those companies have chosen to stay and grow in Baltimore.

Nothing worthwhile is easy

A transformational vision like Equitech will take endurance and speed; maintaining focus on a 10-year vision, while making consistent, measurable progress week-in and week-out. And it's definitely not a straight line. We've had wins and missteps this year, and we've continually re-calibrated our priorities, experimenting, evaluating and often shedding activities that don't contribute meaningfully to Baltimore's momentum.

Data is steering our adjustments. We've measured all of our activity with founders, investors and ecosystem partners, giving us the ability to look beyond the top-line numbers to the trends underlying our activities. For example, we found that our success varied by stage of company; while we have supported 49% of Baltimore startups overall, we worked most frequently with the smallest companies (those that have raised between $100,000 and $1 million) who actively sought us out for support, leading to undercoverage of larger companies and the need to develop deliberate strategies for supporting later-stage founders. We also recognized the need for an overarching framework to organize our work with companies, and are in the midst of dialing in on a strategy to bracket our work

through the remainder of 2022: a resource- and expertise-rich growth platform – like a perpetual accelerator – to serve Baltimore tech and scale startups.

In the pages that follow, we'll share the details of our key learnings, our activity metrics and Baltimore's progress. Our small team is both proud of the foundation that we've built this year and impatient to tackle the many opportunities that lie ahead.

With gratitude

We have too many people to thank to name them all individually, but we deeply appreciate the supporters who provide the resources to do our work and the belief to buoy us as we sail into the future. I want to thank our board, the UpSurge and Techstars teams, the ecosystem partners across the city, our academic counterparts, city and state leaders, and the founders and investors who are choosing Baltimore as the place to grow and invest.

We are trying to accomplish something that has not been done before in our country: to build a thriving innovation hub, an Equitech city, where rockstar companies led by diverse entrepreneurs are born and thrive, where the tech workforce of the future is growing up in our neighborhoods, and where prosperity is shared across every Zip code. We want to be the center of gravity for the technologies transforming society – not because it's an obligation, but because it's an opportunity. When we accomplish this, Baltimore will be a model for the world. We can do this, hon.

Thanks so much for being on this journey with us.

Jamie McDonald
Chief Executive Officer

A look back at UpSurge's first year.

UpSurge Baltimore launched in April 2021 with the support of a group of local leaders who believed that the time was right for Baltimore to take its place among the country's leading brain hubs.

We're building on our prime East Coast location, globally recognized academic institutions, committed private sector companies and leaders, dozens of nearby federal labs and agencies, and an immensely talented population that has been underestimated for far too long. There has never been a better time to mobilize our startup ecosystem.

We didn't launch UpSurge in a vacuum. We're amplifying efforts launched by long-term ecosystem actors. These include:

- **Higher education leaders**, such as those at Johns Hopkins Technology Ventures, University of Maryland's UM Ventures, bwtech@UMBC, StarTUp at Towson University, the EDAC at Morgan State, and the Center for Innovation and Entrepreneurship at Loyola University Maryland, who have lifted research and entrepreneurship as distinct local strengths.

- **Local incubators and accelerators**, including the Emerging Technology Centers (ETC), Conscious Venture Lab, Hutch, Healthworx 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 Baltimore companies** that invest significant time, talent and capital in bolstering the strength of our innovation economy.

Our goal was to support and accelerate the momentum of these individual efforts while we aligned around a larger, collective vision. **Others quickly joined us, providing the resources – financial and intellectual – to pursue a bold vision: becoming the country's first Equitech city.**

Why startups?

1. **It's time for Baltimore to take its place among the country's leading innovation hubs.** With an incomparable location, abundant assets — including universities, incubators and accelerators — committed tech leaders and an extraordinarily talented population, Baltimore has everything it needs to thrive over the long term.

2. **Entrepreneurship — in our neighborhoods, business districts and academic centers — is key to inclusive prosperity.** Our collective effort has the power to change Baltimore, with 21st century pathways of opportunities that can build generational wealth in our communities and prosperity for our city. It's not the whole answer, but it's a key piece.

3. **Entrepreneur-driven, high-growth companies are the primary drivers of economic success in the fastest growing urban areas.** These companies account for more than 20% of gross job creation in the U.S. each year — and that percentage is growing. And they deliver quality jobs that provide pathways to career mobility, wealth creation, secure families, and stable neighborhoods.

4. **The final piece of Baltimore's business puzzle is startups and growth companies.** Much of our growth over the past two decades was driven by Main Street businesses and large corporations. Both are vital to a vibrant, growing city. But too many Baltimoreans feel the tech economy and its high-quality jobs are out of reach. We have the potential to change the system at all levels.

Focused on good jobs

	Small Main Street Businesses	Medium Main Street Businesses	Tech Startups	Scale Startups/ Businesses	Large Scale Businesses
Employees	<10	10-15	3-50	50-1000	>1000
Wage Range	$8.00- $15.00/hr, often less than full time. Annual <$10k-$30K	Annual: <$10k-$75k	Annual: <$40k-$250k	Varied, Annual: $25k-$500k	Varied, Annual: $25k to >$1million
Wage Mobility	Extremely limited	Limited	Strong	Generally, yes	Often, yes
Benefits	Rarely	Sometimes	Generally, yes	Generally, yes	Generally, yes

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UpSurge focuses on the innovation economy because that's where the fastest growth in family-advancing jobs exists. Our approach aims to complement the many other efforts supporting small and large businesses.

Equitech as the throughline

UpSurge coined the phrase Equitech to focus and underscore our "tech-for-all" mission. In the third decade of the 21st century, at a time of racial reckoning for our country, it is not enough to aspire to build a thriving startup economy. We and our supporters understood this as a moment to reach for more, to build a tech economy that works intentionally toward three connected objectives:

1. To be a launching pad for tech entrepreneurs of all backgrounds, across sectors and stages, while underscoring the data evidencing diversity as a force-multiplier for company performance.

2. To become a center of gravity for companies – in healthcare, FinTech, EdTech, and other sectors – where the tech itself breaks down barriers to equity.

3. To support pathways into tech for all Baltimoreans who seek them, and to advocate for 'Prosper in Place' policies and programs.

This translates into six tactical workstreams:

UpSurge's Core Work

1 Founders & Companies

Engaging, attracting, connecting, investing in entreprenuers and startups. Building an Equitech Accelerator hub.

2 Capital

Growing local capital and attracting outside capital into the ecosystem.

3 Talent

Attracting, retaining and building new talent pathways.

4 Collaboration & Connection

Building bridges within and across the local & national innovation world, with touchpoints like Equitech Tuesdays.

5 Storytelling & Marketing

Telling the story – locally and nationally – of Baltimore's distinct assets: civic, university, corporate, Equitech.

6 Pathways into tech and 'Prosper in Place' advocacy

Build pathways and on-ramps into tech for Baltimoreans across the city. Advocate for the policies, programs and new technologies that help families prosper in place.

Key to success in Baltimore and all startup cities

Distinctly Baltimore/Equitech

Equitech is not a box we're trying to check. It's the lens through which we see each of our workstreams. This is an organic, fully integrated approach that runs through everything we do.

Founders and their companies are our North Star

The growth and retention of Baltimore-based startups is foundational to the Equitech vision and to our city's future success.

A year of focused support to local startups underscored the ways in which UpSurge's role will vary depending on the nature and stage of the company. We meet founders where they are.

Some seek comprehensive wrap-around services; others need occasional support – particularly those connected to local universities, such as Johns Hopkins and the University of Maryland, which offer highly effective programs to nurture founders and ideas emerging from their campuses. In every case, we focus on delivering the right support at the right time, enabling startups to launch and scale in Baltimore, while rallying our community as cheerleaders for their successes.
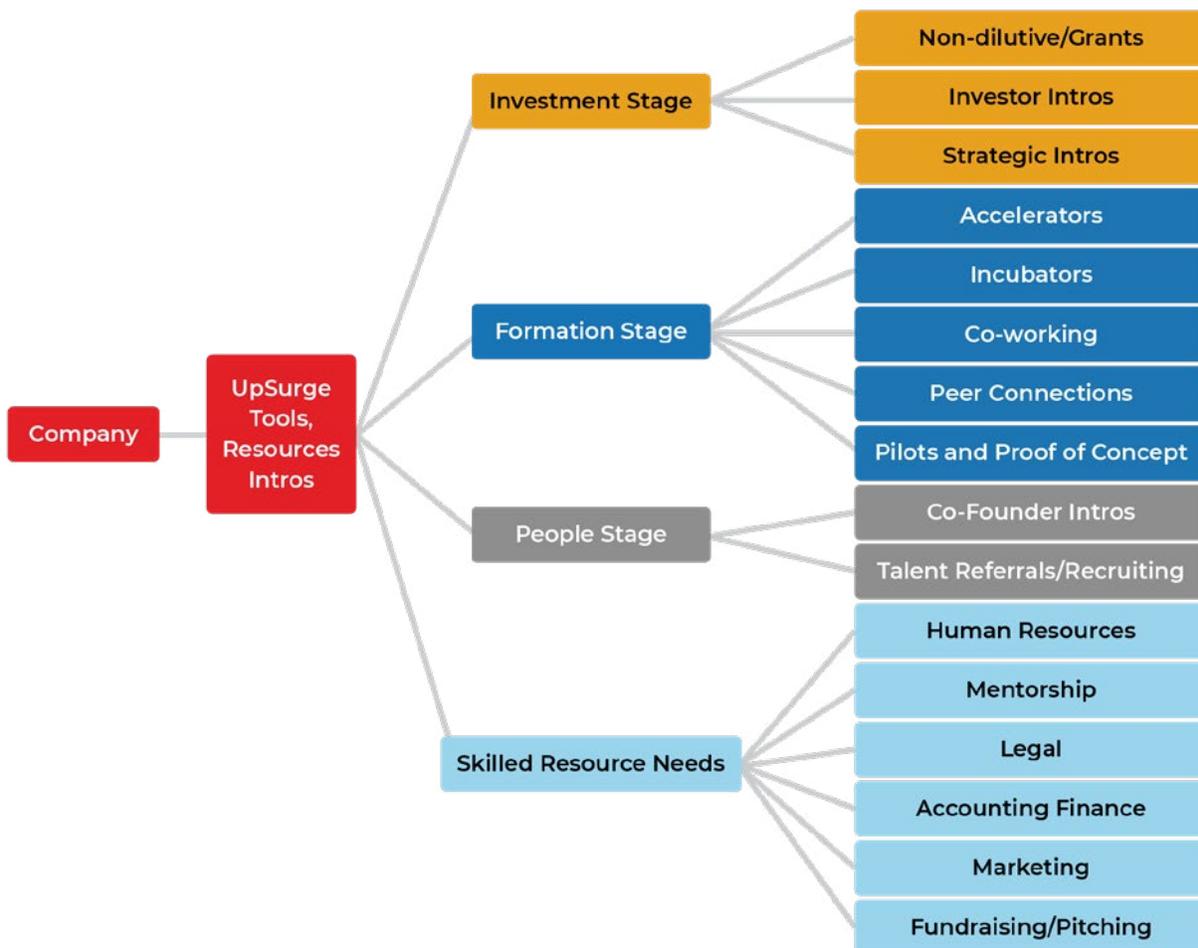
Long-term vision + consistent, measurable activity

We launched with a clear understanding that we had to simultaneously keep our focus on the long-term Equitech vision while consistently 'putting points on the board' week in and week out. For UpSurge, 2021 was about learning and building. The strategic priorities of our first year informed, validated and reframed our approaches. We committed to providing transparent data about Baltimore's startup community and our work within it, emphasizing the importance of accountability to the ecosystem we serve and support. That led us to establish clear objectives against which to measure our progress:

UpSurge metrics

- Number of knowledge-economy companies overall
- New companies launched
- Company growth: funding, employees, revenue, real estate/office
- Corporate partners becoming pilot partners, proof of concept, customers, R&D partnerships
- Knowledge economy jobs: total & new
- Capital invested into Baltimore companies

- Adoption of Equitech model:
  - Diversity of local founders
  - Increased funding to underestimated founders
  - Diversity of leadership teams
  - Diversity of local knowledge
  - Economy workforce
  - Wage advancement
- Successful exits
- Regional offices of large tech companies

UpSurge's first ecosystem report, released in April 2021, provided a comprehensive look at the types of companies and investors currently engaged in Baltimore. We used those data to set our own, internal benchmarks and to hold ourselves accountable.

Here's a look at UpSurge's activity in 2021 and and our newly set benchmarks for 2022:

UpSurge Coverage Activity: Companies

Direct Service	Companies YE 2021	Companies supported by UpSurge	% of 2021 Targets	Benchmark 2022
Funded Companies >$5MM	53	22	41%	75%
Funded Companies $1MM-$5MM	43	15	35%	60%
Funded Companies <$1MM	165	90	55%	50%

As we built our coverage infrastructure in year one, we found wide variation in the needs and accessibility of companies of different sizes. The least mature companies sought our support consistently. More mature startups need us to provide a different set of networks and resources.

UpSurge Coverage Activity: Investors (Angel, VC, PE)

Target Partner	2021 (Year One)	Benchmark 2022
Direct Investor Meetings (local and national)	70	125
Large Group Investor Meetings (number/total attendees)	3 meetings/ 82 attendees	4
Investor Intros to companies	52	100
Introducing investors to potential LPs	17	50

While we made strides with investors in our first year, this remains a key target group where we have not yet achieved consistent momentum.

UpSurge Coverage Activity: Other Ecosystem Partners

Target Partner	2021 (Year One)	Benchmark 2022
Corporate Partners	22	40
Upsurge Participation in tech events: local & national	51	60
Baltimore Entrepreneur Support Organizations/University Partners	60	60
National Entrepreneur Support Organizations	25	25
Equitech Tuesdays	31 events 450 attendees 178 unique	300 unique attendees
Real Estate Brokers	25	50

This work has been key to establishing connectivity and trust in the ecosystem.

Growth at scale:
Equitech accelerator hub

Even as we work daily to assist individual startups with bespoke support, we are also working on strategies to grow the local tech ecosystem at scale. The core of our effort is building an accelerator hub that will ultimately draw 175 companies to Baltimore every year by 2025.

Why an accelerator hub? We've seen that companies that launch or spend significant time in Baltimore quickly grow to appreciate our rich assets, great location, and intense commitment to their success. If we are able to retain 30-40% of the accelerator companies in Baltimore each year, our city will be home to 350-400 new companies in 10 years – in addition to our local organic startup growth – building the country's deepest center of inclusive tech. As greater startup density attracts talent and capital, Baltimore will see exponential growth.

Techstars is our first partner in this effort. By 2022, we had attracted two Techstars accelerators to Baltimore. Twelve groundbreaking startups moved to Baltimore last fall to join the first global Techstars Equitech Accelerator, and Stanley Black & Decker soon joined as our first corporate partner, bringing another 10 companies to Baltimore with the launch of the STANLEY+Techstars cohort in February. In the inaugural Techstars Equitech class, three companies were from Baltimore. Of the nine who moved here for the program, three signed on to stay in Baltimore and two international companies were working to make Baltimore their U.S. headquarters. Their plans are our first data point reinforcing this strategy. (No surprise to any of us who love and believe in Charm City!)

Techstars Equitech Cohort #1

- 11 Companies: 2 Baltimore-based; 9 national and global

- Techstars Equitech 2021's class received hundreds of applicants, with a 3.1% acceptance rate

- 3 companies moving to Baltimore, with 3 additional considering Baltimore as US HQ or talent hub

Looking into 2022

If 2021 was about learning and building community and the scaffolding of our organization, 2022 is about driving impact. As UpSurge advances the Equitech vision and our goal of making Baltimore the gravitational center for Equitech companies, we must support a variety of interests, while remaining fully transparent about how we track and measure our work.

As a startup itself, UpSurge is learning as we grow. Through the rest of 2022, we will be focused on solidifying the structures of accountability and metrics necessary to measure our work now and in the long-run. And, accountable to our ecosystem, we will be transparent about those measurements – celebrating our successes and pivoting quickly when our efforts aren't working. We're also building a repeatable success cycle that will guide our work, and evolve as we learn and grow.

The UpSurge Success Cycle

1. UpSurge Ecosystem

- Creating Equitech startup culture, brand
- Foster connection across ecosystem
- UpSurge Teams to shape priorities
- Mapping ecosystem
- Develop pilots with key partners focused on talent pathways and 'prosper in place' strategies.

2. Baltimore Startups

- Nurture, support, accelerate, connect
- Provide targeted support and resources
- Celebrate who and what's here through the UpShot

3. New Companies, Capital, Talent

- Direct outreach strategy to attract companies
- Equitech Accelerator Hub: 10 Techstars accelerators by 2025
- Company targeting algorithm to identify founders, companies and talent predisposed to consider Baltimore

4. National Visibility and Brand

- Equitech Prize Launch (2022) Investment + incentives
- National marketing program

5. Post COVID

- Education events
- Company and Investor Visits
- Real Estate strategies
- National Equitech Conference

A record-breaking year, by the numbers

Highlights from Baltimore's progress in 2021

- In terms of dollars raised and deal count, 2021 was a breakout year for Baltimore relative to other post-industrial cities against whom we are often compared, although we and our counterparts still lag behind cities such as Austin, Texas, or Philadelphia.

- The number of financially backed startups increased by 35%, jumping from 193 to 261.

- Year over year, Baltimore saw a 161% increase in dollars raised by startups, outpacing even the frothy national increase of 96%, and the average deal size jumped from $4.8 million to $7.9 million. (Moving above the $5 million average deal size is a key milestone, according to Startup Genome, and a sign of an ecosystem at a positive inflection point.)

- In the past year, Baltimore was home to seven deals that were greater than $100 million, compared with only one between 2016 and 2020. (Startup Genome benchmarks cities as accelerating when they have more than two or three $100 million deals — often seen as precursors to unicorn deals — each year.)

- The primary industry of those startups remained relatively constant, led by healthcare (36%) and information technology (28%).

- A slightly greater proportion of startups have reached Series A funding, compared with last year, though more than half are at earlier funding stages.

- Maryland institutions remain vital to the success of startups, with TEDCO, the Abell Foundation, TCP Venture Capital and New Enterprise Associates as some of the most active local investors.

Measurable progress

The long-term vision of creating a thriving and diverse innovation economy in Baltimore requires a firm grounding in data and a transparent commitment to accountability over time.

In 2021, shortly after the launch of UpSurge, we published our first report on the state of Baltimore's innovation ecosystem. It was intended to provide a clearer and deeper understanding of the local landscape and a baseline against which we will measure growth in coming years.

That there were 193 funded startups in Baltimore in 2021 – 46% of which had raised more than $500,000 – surprised many, who assumed a less fertile local ecosystem for startups. Our 2021 report highlighted the fact that a majority of Baltimore startups were in early stages, while also pointing to a sharp increase in deals and deal size over the previous five years, since 2016. This year's report demonstrates dramatic growth throughout the ecosystem.

As with any data snapshot, this report presents only one moment in time. It is largely based on Pitchbook data, which Pitchbook may amend retroactively to account for previously unreported information. And, while we will use this information to track ecosystem growth and trends, the startup environment may shift dramatically from year to year. As the eye-popping pace of growth seen by many life sciences and digital healthcare companies in 2021 may stabilize or slow in future years, for example, it's vitally important to track progress across meaningful timeframes. The 2022 report adds a comparison of Baltimore's dollars raised and deal count against that of other U.S. cities, offering another way to assess how we're doing in carving out our place among the country's growing tech hubs. We recognize that other cities' data may be reported differently in local markets, based on their reconciliation of Pitchbook data with local ecosystem information.

The Baltimore innovation ecosystem is broader than that what even Pitchbook — the measurement tool on which we rely — captures. UpSurge tracks around 100 companies that are not included in this report for various reasons. Some are based in surrounding counties. Others are small, early stage companies that are not yet funded. And a notable number are larger, bootstrapped companies that have not raised outside funding. UpSurge includes all of these companies in its coverage mandate and has already provided support to more than half of them.

The Baltimore Startup Ecosystem Today

261

All funded companies

159

Companies with funding > $100K

96

Companies with funding > $1MM

53

Companies with funding > greater than $5mm

The charts and data in this report provide a look at the current state of the Baltimore startup ecosystem, with a focus on funded startups based in Baltimore and those with a significant Baltimore presence.

According to Pitchbook data,* there are 261 active Baltimore-based, funded companies founded since the beginning of 2011. Of those, 61% have funding greater than $100,000 and 45% have funding greater than $500,000.

All data, except where noted, is through the end of 2021.
* Reference appendix for Pitchbook search criteria.

Funded companies in Baltimore, 2020 & 2021
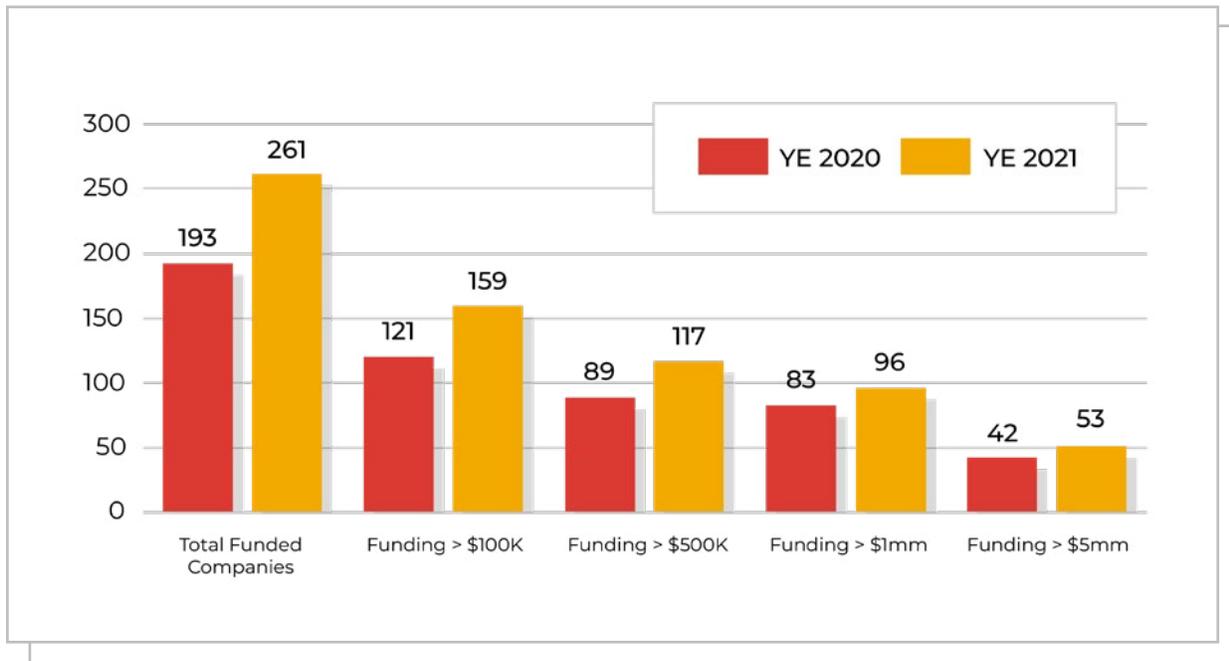
Please note: Each funding level (pair of bars) is a subset of the bars to their left.

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Excluded from exhibit data: PGDx merger, $450mm, ZeroFox SPAC, $1,400mm and Thrive merger, $2,190mm.

Funded Baltimore startups by year founded
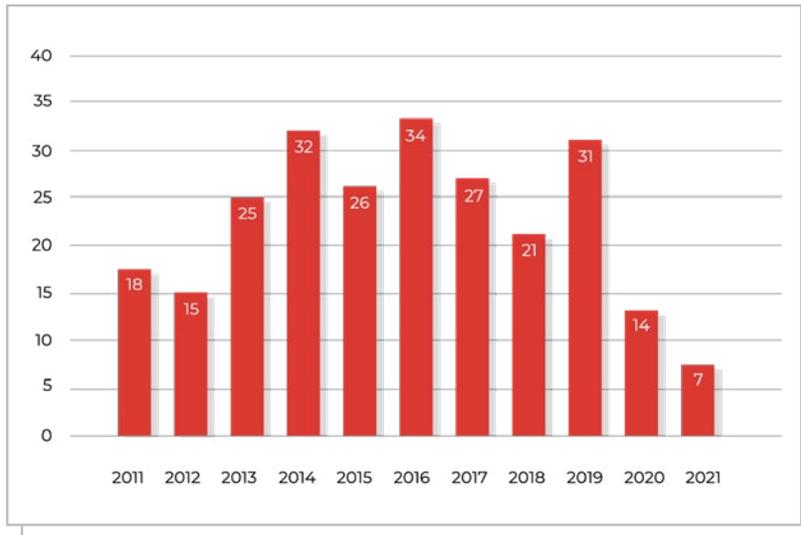
Funded backed Baltimore startups by year founded (cumulative)
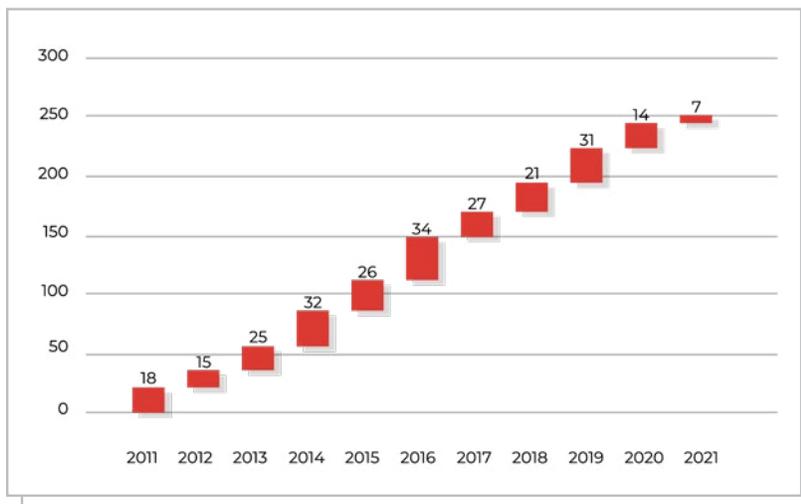
In each year cited here, the number of funded companies has remained steady or grown since our 2021 report. Last year, for example, we reported 18 companies founded in 2019 and none founded in 2020 were funded; this year, those figures are 31 and 14 companies, respectively, and seven companies started in 2021 have already received funding. This points both to the quality of Baltimore startups and to a robust funding environment in which VCs were considering earlier stage companies.

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Baltimore-based startups by primary industry
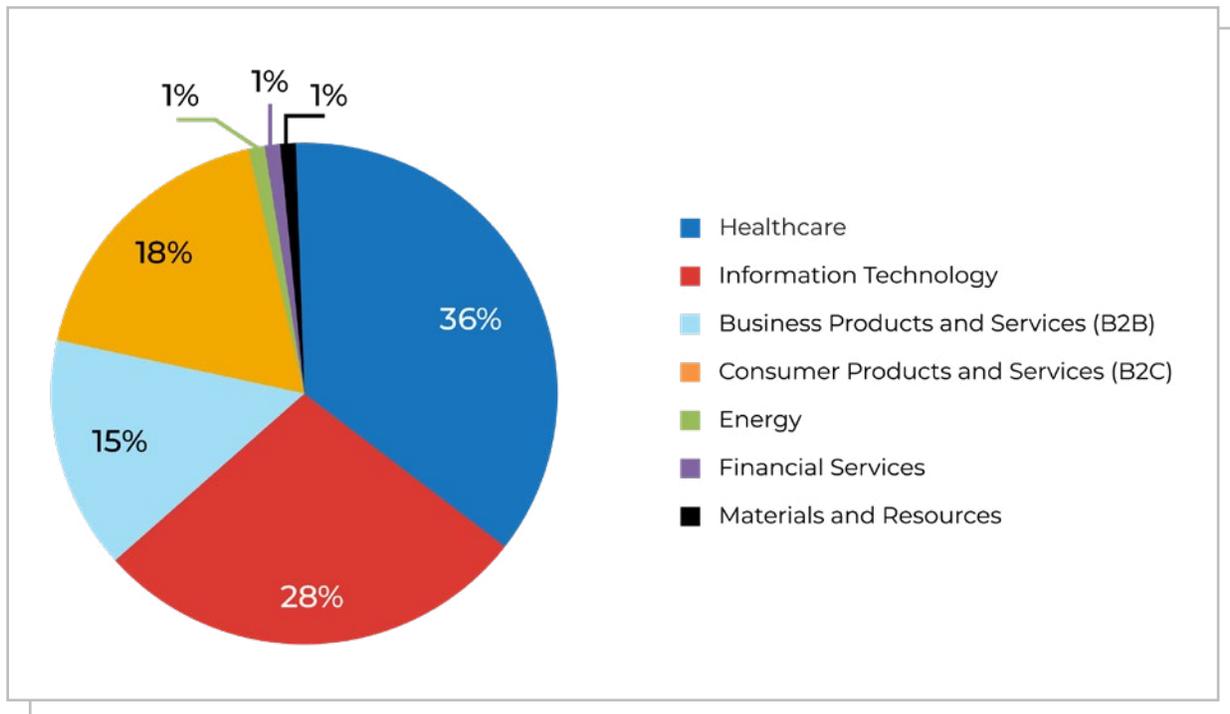
The percentage of Baltimore startups in the healthcare industry declined slightly over the last year (38% in our 2021 report; 36% this year). Pitchbook tends to include digital health startups — another area of strength in Baltimore—within the IT sector, rather than in healthcare. The full continuum of healthcare, from life sciences and medical devices to digital health and wellness, was part of the strength of our ecosystem over the past year.

*Percentages are based on 261 funded startups in the Baltimore ecosystem.*

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Baltimore-based healthcare startups by sub-industry

Healthcare companies comprise more than a third (36%) of Baltimore's 261 funded startups, about the same percentage as in the 2021 ecosystem report. Those 94 companies fall into the following sub-industries:
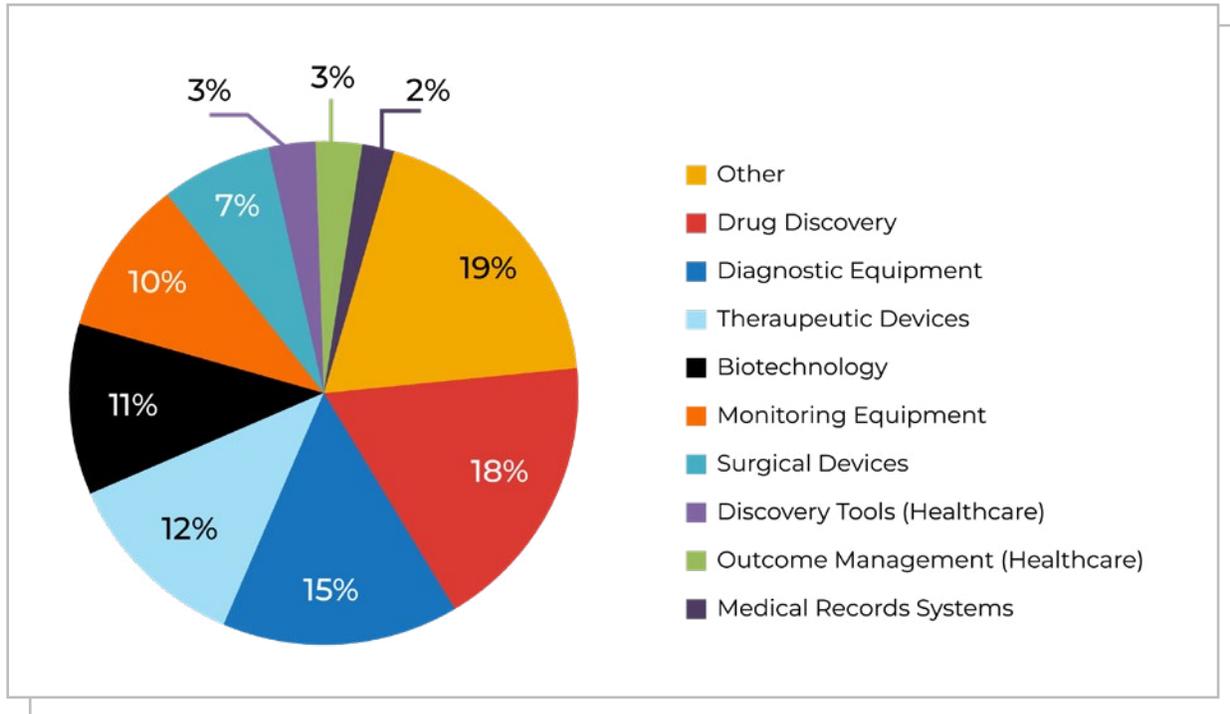
Pie chart legend:
- Other — 19%
- Drug Discovery — 18%
- Diagnostic Equipment — 15%
- Theraupeutic Devices — 12%
- Biotechnology — 11%
- Monitoring Equipment — 10%
- Surgical Devices — 7%
- Discovery Tools (Healthcare) — 3%
- Outcome Management (Healthcare) — 3%
- Medical Records Systems — 2%

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Baltimore-based IT startups by sub-industry

Information technology companies comprise nearly 28% of Baltimore's 261 financially backed startups, a slight uptick since the 2021 ecosystem report (27%). Those 72 companies fall into the following sub-industries:
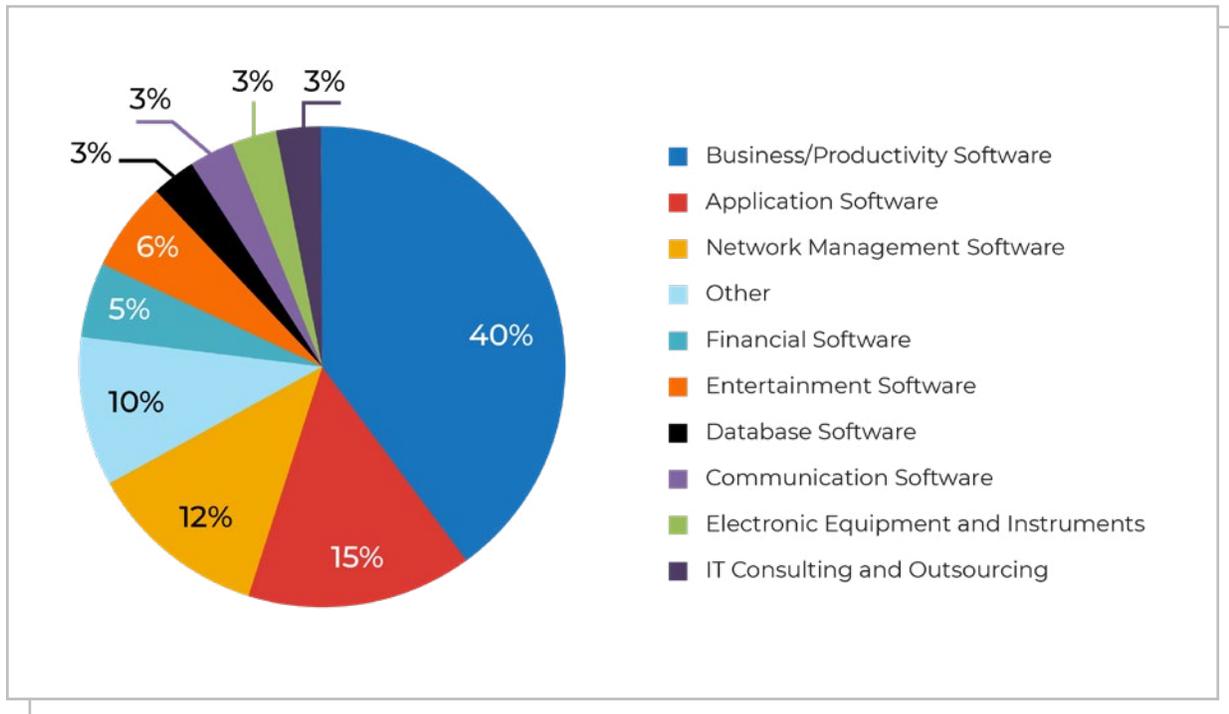
Over the past year, we saw a decrease in the percentage of IT startups in Business/ Productivity Software (46% to 40%) and notable growth in Network Management Software (8% to 12%).

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Current startup stage*

The Baltimore startup ecosystem didn't see dramatic shifts in startup stages in 2021, but more companies reached the early and later stage VC categories — as also reflected in the increase in deal size and numbers of deals reported later in this report.

All startups

Startups with funding >$100K

- ■ Accelerator/Incubator
- ■ Angel (individual)
- ■ Merger/Acquisition
- ■ Early Stage VC
- ■ Seed Round
- ■ IPO
- ■ Later Stage VC
- ■ Grant
- ■ Other
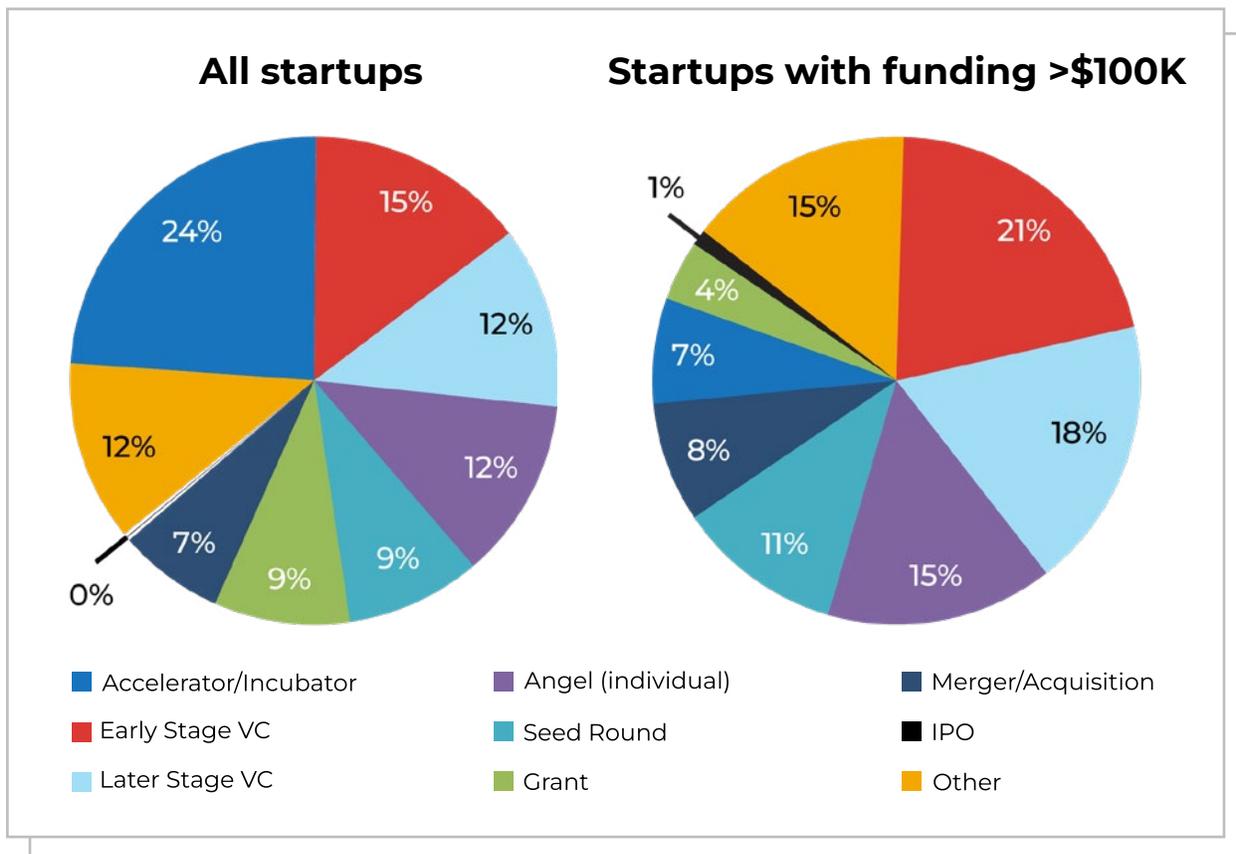
Last year's report included this chart only for the full spectrum of startups. This year, we separate those companies with more than $100K in funding — one proxy for those who have (typically) reached the MVP stage or beyond — to take a deeper look at their progress.

Stage determined by last financing type

Note: n=259 financially backed Baltimore companies as of year-end 2021, from Pitchbook data; information was not available on two of Baltimore's 261 companies.

UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Dollars raised and deal count for Baltimore startups

Baltimore's ecosystem has experienced a dramatic increase in deals and deal size in recent years. Even in the frothy tech-investment landscape of 2021, our city is performing well. Year over year, dollars raised in Baltimore is up 161%, outpacing the national increase of 96%. In addition, the average deal size in 2021 was $7.85 million, up 64% from $4.8 million the previous year.
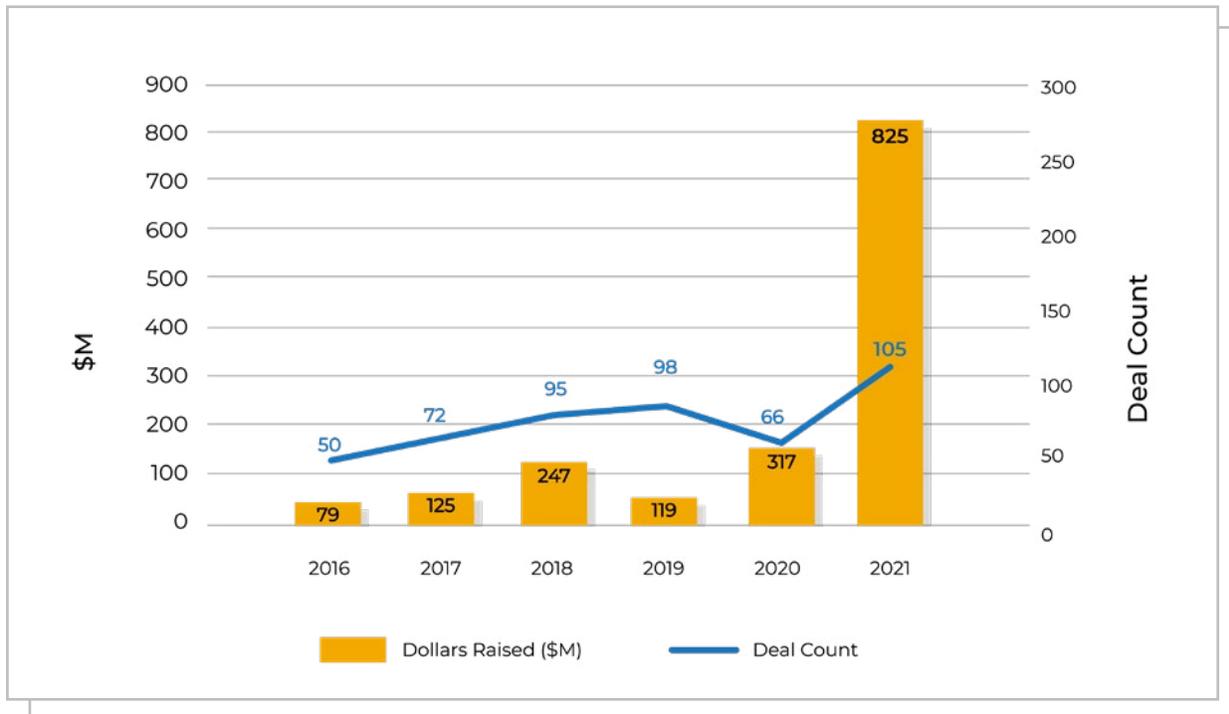
UpSurge data are compiled via Pitchbook and reconciled with ecosystem activity not captured by the software.

Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

Excluded from exhibit data: PGDx merger, $450mm, ZeroFox reverse merger, $1,400mm and Thrive merger, $2,190mm.

Investor participation in ecosystem deals, 2011-present

Of the 682 total investors in Baltimore startups, 59 have participated in three or more deals; 350 have participated in only one.
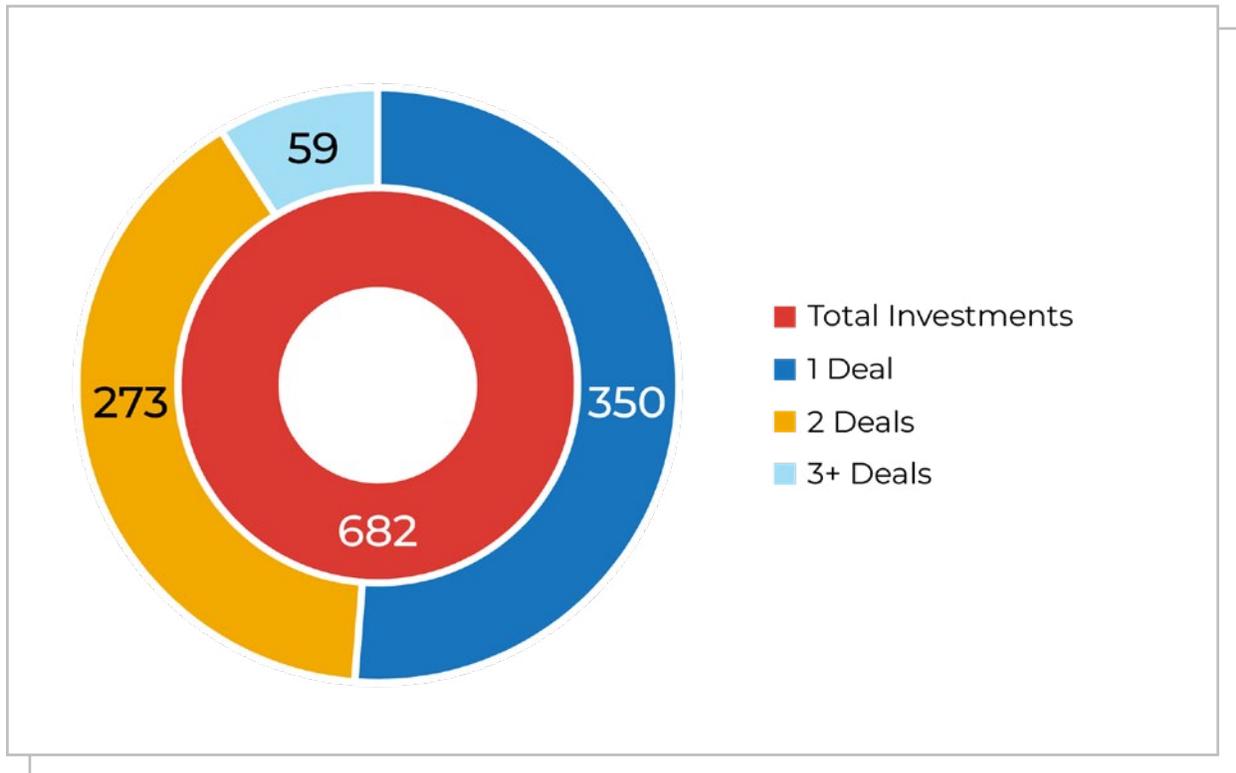

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20 most active investors in Baltimore startups, period ending 12/31/2021

Timeframe, 2011-2021

| Investor Name	Deals	Investor Type	Investor HQ State
TEDCO	99	Government	Maryland
National Science Foundation	40	Government	Virginia
VentureWell	27	Accelerator	Massachusetts
National Institutes of Health	25	Government	Maryland
The Abell Foundation	25	Foundation	Maryland
U.S. Department of HHS	22	Government	District of Columbia
Accelerate Baltimore	19	Accelerator	Maryland
Baltimore Angels	19	Angel Group	Maryland
Dreamit Ventures	13	Accelerator	New York
TCP Venture Capital	12	Venture Capital	Maryland
New Enterprise Associates	10	Venture Capital	Maryland
Maryland Industrial Partnerships	9	University	Maryland
Maryland Momentum Fund	9	Venture Capital	Maryland
Gaingels	8	Venture Capital	New York
UM Ventures	8	Venture Capital	Maryland
Conscious Venture Lab	7	Accelerator	Maryland
Catalio Capital Management	6	Venture Capital	New York
Emerald Development Managers	6	Venture Capital	New York
ETC Baltimore	6	Accelerator	Maryland
F-Prime Capital	6	Venture Capital	Massachusetts

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20 most active investors in Baltimore startups, deal count over time, period ending 12/31/2021

Investor Name	Last 6 Months	Last 12 Months	Last 2 Years	2016 - 2021
TEDCO	11	17	23	51
National Science Foundation	6	9	17	30
VentureWell			8	21
National Institutes of Health	1	1	2	15
The Abell Foundation	1	1	5	13
U.S. Department of HHS				12
Maryland Momentum Fund			1	9
Accelerate Baltimore				8
Baltimore Angels				8
TCP Venture Capital		1	4	8
Gaingels		3	4	7
New Enterprise Associates	1	2	3	6
UM Ventures			2	6
Conscious Venture Lab				6
Catalio Capital Management		2	5	6
F-Prime Capital		1	1	6
Emerald Development Managers			3	5
Dreamit Ventures				3
ETC Baltimore				2
Maryland Industrial Partnerships				2

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Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

20 most active investors in Baltimore startups, outside of MD, DC, VA

Timeframe, 2011-present

Investor Name	Deals	Investor Type	Investor HQ State
VentureWell	27	Accelerator	Massachusetts
Dreamit Ventures	13	Accelerator	New York
Gaingels	8	Venture Capital	New York
Catalio Capital Management	6	Venture Capital	New York
Emerald Development Managers	6	Venture Capital	New York
F-Prime Capital	6	Venture Capital	Massachusetts
Techstars	6	Accelerator	Colorado
Blue Venture Fund	5	Corporate Venture Capital	Illinois
JLABS	5	Accelerator	California
Kaiser Permanente Ventures	5	Corporate Venture Capital	California
Kapor Capital	5	Venture Capital	California
MassChallenge	5	Accelerator	Massachusetts
Plug and Play Tech Center	5	Accelerator	California
Windham Venture Partners	5	Venture Capital	New York
Arthur Ventures	4	Venture Capital	Minnesota
Canaan Partners	4	Venture Capital	California
Capital Factory	4	Venture Capital	Texas
Co-Win Ventures	4	Venture Capital	Beijing, China
Creative Startups	4	Accelerator	New Mexico
Highland Capital Partners	4	Venture Capital	Massachusetts

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Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

20 most active investors in Baltimore startups that have raised <$1 million

Timeframe, 2011-present

Investor Name	Deals	Investor Type	Investor HQ State
TEDCO	47	Venture Capital	Maryland
National Science Foundation	28	Government	Virginia
VentureWell	19	Accelerator	Massachusetts
Accelerate Baltimore	16	Accelerator	Maryland
U.S. Department of HHS	11	Government	District of Columbia
Maryland Industrial Partnerships	8	University	Maryland
Conscious Venture Lab	6	Accelerator	Maryland
National Institutes of Health	6	Government	Maryland
The Abell Foundation	6	Foundation	New York
Dreamit Ventures	5	Accelerator	New York
National Science Foundation Innovation Corps	5	Accelerator	Virginia
Creative Startups	4	Accelerator	New Mexico
ETC Baltimore	4	Accelerator	Maryland
Techstars	4	Accelerator	Colorado
Baltimore Creative Accelerator	3	Accelerator	Maryland
Fearless (IT Consulting and Outsourcing)	3	Corporation	Maryland
HATCH (B2B Consulting Services)	3	Accelerator	Maryland
Johns Hopkins University Endowment	3	Limited Partner	Maryland
Social Innovation Lab (Johns Hopkins University)	3	Accelerator	Maryland
TRX Systems	3	Other	Maryland

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Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

20 most active investors in Baltimore startups that have raised $1-$5 million

Timeframe, 2011-present

Investor Name	Deals	Investor Type	Investor HQ State
TEDCO	17	Venture Capital	Maryland
The Abell Foundation	9	Foundation	Maryland
National Science Foundation	8	Government	Virginia
Maryland Momentum Fund	7	Venture Capital	Maryland
VentureWell	6	Accelerator	Massachusetts
MassChallenge	5	Accelerator	Massachusetts
Baltimore Angels	4	Angel Group	Maryland
Halcyon Incubator	3	Accelerator	District of Columbia
JLABS	3	Accelerator	California
National Institutes of Health	3	Government	Maryland
U.S. Department of HHS	3	Government	District of Columbia
UM Ventures	3	Venture Capital	Maryland
Village Capital	3	Accelerator	District of Columbia
301 Ventures	2	Venture Capital	Maryland
Accelerate Baltimore	2	Accelerator	Maryland
C5 Accelerate	2	Accelerator	England
Crosslink Capital	2	Venture Capital	California
eHealth Ventures (Israel)	2	Accelerator	Tel Aviv, Israel
Gaingels	2	Venture Capital	New York

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Pitchbook continuously updates data retroactively so future reporting could yield differences in both deal sizes and dollars raised.

20 most active investors in Baltimore startups that have raised >$5 million

Timeframe, 2011-present

Investor Name	Deals	Investor Type	Investor HQ State
TEDCO	37	Venture Capital	Maryland
National Institutes of Health	16	Government	Maryland
Baltimore Angels	14	Angel Group	Maryland
TCP Venture Capital	11	Venture Capital	Maryland
New Enterprise Associates	10	Venture Capital	Maryland
The Abell Foundation	10	Foundation	Maryland
U.S. Department of HHS	8	Government	District of Columbia
Dreamit Ventures	7	Accelerator	New York
Catalio Capital Management	6	Venture Capital	New York
F-Prime Capital	6	Venture Capital	Massachusetts
Blue Venture Fund	5	Venture Capital	Illinois
Gaingels	5	Venture Capital	New York
Maryland Venture Fund	5	Venture Capital	Maryland
Windham Venture Partners	5	Venture Capital	New York
Arthur Ventures	4	Venture Capital	Minnesota
Canaan Partners	4	Venture Capital	California
DataTribe	4	Venture Capital	Maryland
Emerald Development Managers	4	Venture Capital	New York
Highland Capital Partners	4	Venture Capital	Massachusetts
Kaiser Permanente Ventures	4	Corporate Venture Capital	California

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Largest Venture Deals,* 2016-2021

$Millions

Company	$M
Thrive Earlier Detection (2020)	$257
Dragos (2021)	$200
Thrive Earlier Detection (2019)	$110
Dragos (2020)	$110
Personal Genome Diagnostics (2021)	$103
Facet Wealth (2022)	$100
Delfi Diagnostics (2021)	$100
Graybug Vision (NAS: GRAY) (2019)	$80
Graybug Vision (NAS: GRAY) (2018)	$75
Personal Genome Diagnostics (2018)	$75
Intergalactic Theraupeutics (2020)	$75
ZeroFox (2020)	$74
ZeroFox (2017)	$40
Dragos (2018)	$37
Facet Wealth (2018)	$37
AsclepiX Theraupeutics (2020)	$35
ZeroFox (2021)	$34
WindMIL Theraupeutics (2018)	$33
b. well Connected Health (2021)	$32
VITA Theraupeutics (2021)	$32
LifeSprout (2020)	$29
READY Robotics (2020)	$25
Facet Wealth (2020)	$25
Protenus (2021)	$21
Glyscend Theraupeutics (2020)	$21
Whitebox (Business/Productivity Software) (2022)	$20
ZeroFox (2019)	$20
Real Time Medical Systems (2021)	$20

Includes Accelerator/Incubator, Angel, Early Stage VC, Late Stage VC, Seed Round deals greater than $20M

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Notable exits,* 2016-present

Company	Date	Amount ($M)	Acquiror/IPO
Thrive Earlier Detection	01.05.21	$2,150	Exact Sciences
ZeroFox	12.20.21	$1,400	L&F Acquisition (SPAC)
Prometric	01.29.18	$1,000	Baring Private Equity Asia
Personal Genome Diagnostic	12.24.21	$450	Laboratory Corporation of America (NYS: KH)
Howard Bank	01.22.22	$418	First National Bank
GrayBug Vision	09.25.20	$320	IPO
eOriginal	12.16.20	$280	Wolters Kluwer
1st Mariner Bank	03.01.18	$174	Howard Bank
Flywheel Digital	11.01.18	$113	Ascential
Avidea Technologies	12.13.21	$40	Vaccitech
Protego Labs	12.02.19	$40	Check Point Software
Vend Lease Company	06.27.18	$38	People's United Bank
eThink	12.04.20	$20	Learning Technologies
Blispay	02.07.19	$8	Alliance Data Systems
Audacious Inquiry	02.01.22		PointClickCare
STAQ	03.16.21		Operative
Analytical Informatics	11.24.17		Philips
Avhana Health	01.13.21		AmalgamRx
BridgeEdU	06.11.19		Edquity
Fixt	08.17.20		Assurant
Fractal Technology	09.12.17		Sunayu
MET Laboratories	12.31.17		Eurofins Scientific
Neuro Motor Innovations	11.11.18		MindMaze
NextGen Venture Partners	02.12.18		Brown Advisory
Parking Panda	04.13.17		SpotHero
Pinkaloo	03.09.21		Renaissance Administration
R3 Score Technologies	09.23.20		Global Boatworks
StraighterLine	04.23.20		BV Investment Partners
Teampassword	03.06.18		Jungle Disk
Tissue Analytics	05.14.20		Net Health Systems
Workbench	11.28.18		Alphabet

Not all acquisition amounts were disclosed

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Baltimore compared to other post-industrial cities, 2021
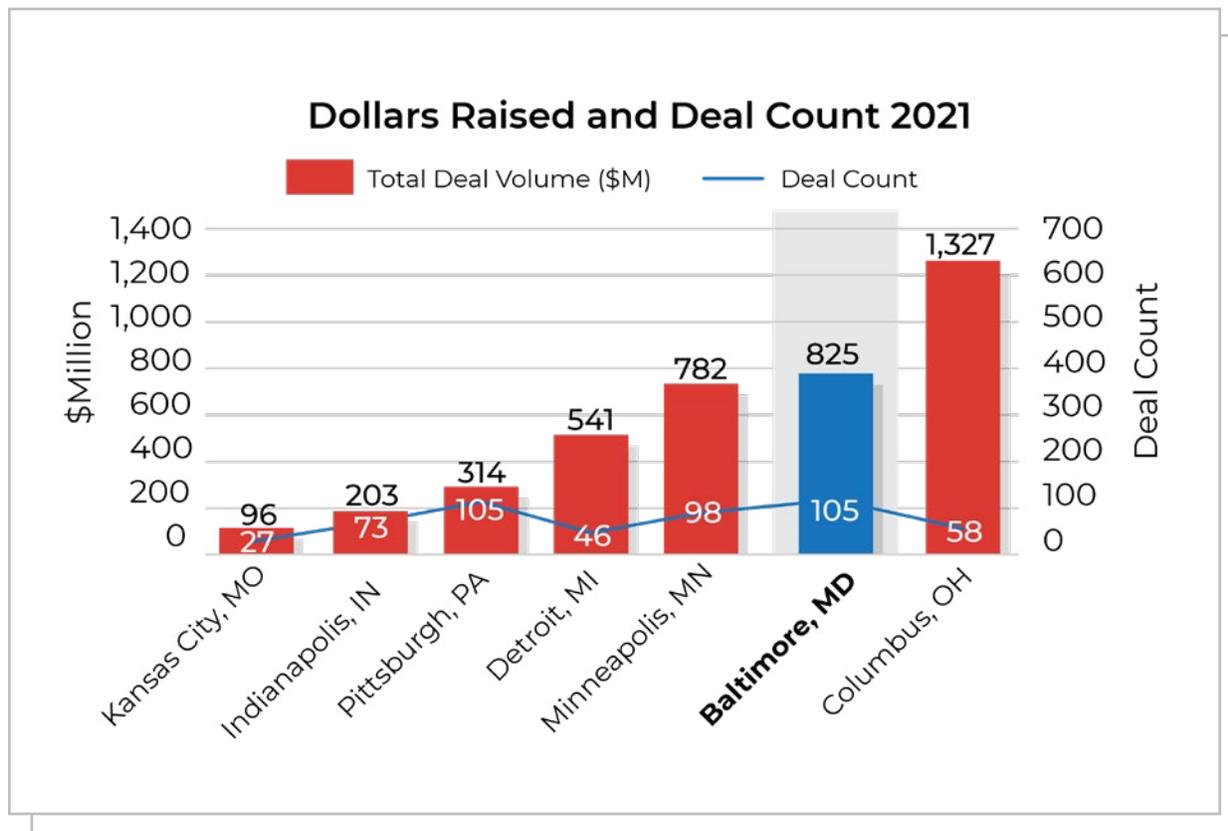
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Excluded from exhibit data: PGDx merger, $450mm, ZeroFox reverse merger, $1,400mm and Thrive merger, $2,190mm.

Baltimore compared to other cities, 2021

Dollars Raised and Deal Count in 2021
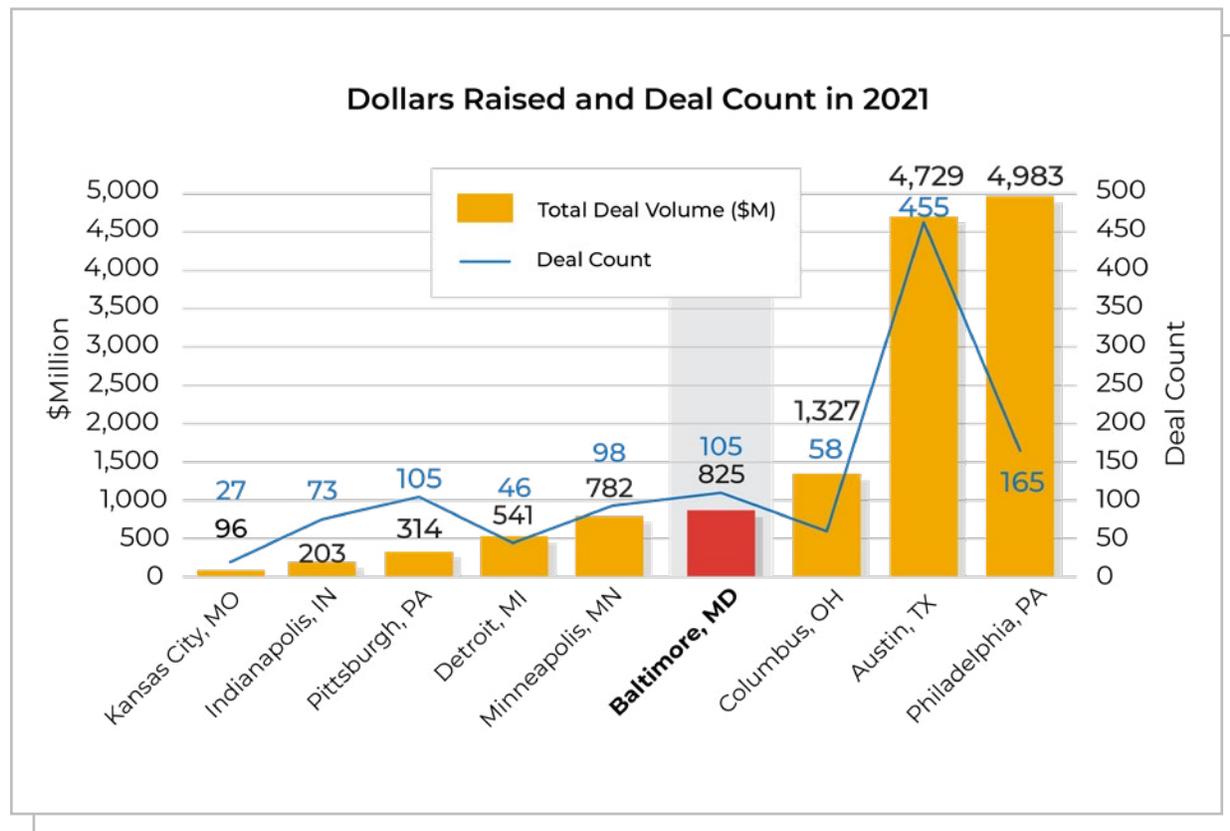
While Baltimore has separated from the group of cities to whom it is most often compared, we still lag far behind breakout cities like Austin and Philadelphia.

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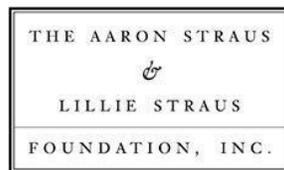
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