Investment in Pittsburgh’s technology sector
Trends and highlights, 2010-2019
Ernst & Young LLP (EY US) and Innovation Works, Inc. are proud to present our eighth annual review of Pittsburgh’s technology investment landscape. This report provides a comprehensive review of investment and exit activity in the Pittsburgh region from 2010–2019.

2019 represented a record year, with 139 unique Pittsburgh area startups attracting close to $3.0 billion in funding. In the past 10 years, nearly 600 unique Pittsburgh companies attracted more than $6.6 billion in investment. While the total number of companies funded declined slightly from 2018, from 147 to 139 companies in 2019, the amount of investment dollars increased more than 5X from $550 million to almost $3.0 billion driven by $2.0 billion of corporate investment and $928 million of venture capital investment.

The amount of available investment capital resident in local venture capital funds increased slightly in 2019, however, outside firms attracted by Pittsburgh’s growing reputation as a technology hub filled the gap. Approximately 270 firms from around the world invested in Pittsburgh companies in the last five years, including 39 making their first investment in our region in 2019.

These firms were attracted by Pittsburgh’s regional strengths in AI, robotics, and life sciences, with autonomous vehicles and robotics continuing to draw the lion’s share of investment dollars (87%) in 2019. Pittsburgh’s leading class technical capabilities and talent, the $10 billion of university research over the past decade, capital efficiency and $10.7 billion of exit proceeds over the past decade combine to make Pittsburgh an attractive destination for investors.

Both EY US and Innovation Works, Inc. are committed to supporting entrepreneurial growth in the region. Tracking investment activity helps us begin conversations with new investors interested in regional deals, informs local investors about our strengths versus other communities, and chronicles what’s working and where we need to focus efforts. We hope this report provides you with useful insights into the state of the local technology community and venture capital ecosystem and inspires new ways to move it forward.

Leon Hoffman
Pittsburgh Office Managing Partner, Ernst & Young LLP

Rich Lunak
CEO, Innovation Works, Inc.
A record year for tech investment in Pittsburgh

$3 billion was invested in Pittsburgh technology companies in 2019, a record

2019 marked a record year for investment in Pittsburgh technology companies driven by a $741 million or 397% increase in dollars invested by venture capitalists and a $1.7 billion or 688% increase in dollars invested by corporate investors. Significant venture capital financing rounds included Complexa, Duolingo, Gecko Robotics, Idelic, Maven Machines and RoadBotics, while Argo AI, Aurora and Uber ATG represent the majority of the corporate investments.

The total investment in technology companies experiences significant year-to-year fluctuations. To uncover the underlying trend it is helpful to examine a three-year trailing average as shown in the adjacent chart. The value displayed for each year is the average of the total investment amount in the three prior years, i.e., the value for 2010 is the average of the total investment in 2008, 2009 and 2010. The three-year trailing average has grown 427% since 2010 and 292% in the past five years alone.

Source: CB Insights, Dow Jones VentureSource, Innovation Works and PitchBook

Source: CB Insights, Dow Jones VentureSource, Innovation Works and PitchBook
Pittsburgh offers a robust pipeline of opportunities

The total number of financing rounds and number of unique companies funded decreased slightly compared with 2018. However, consistent with national trends, the average venture investment deal size increased to $15.7 million in 2019 from $5.7 million in 2018. The long-term trend is clear: the number of unique companies funded has risen steadily over the past 10 years, with a 48% increase since 2010.

The trailing three-year averages of the above data reveal a 12% increase in funding rounds and 24% increase in the number of unique companies funded over the past five years. The three-year average total investment exceeds the growth in funding rounds, leading to a 43% increase in the mean deal size over the same period. The primary driver is that the largest rounds are growing larger: the record for the largest venture capital (VC) financing round in Pittsburgh history has been set and broken three times in the past five years.
Autonomous robotics companies continue to attract major investments

Pittsburgh tech companies have attracted more than $6.6 billion in funding more than the past 10-years, including $4.9 billion in the past five years. The amount of capital attracted by autonomous vehicle and robotics companies in 2019 dwarfed all other sectors. The three largest financing events captured in the data: Argo AI, Aurora and Uber ATG, all create autonomous systems and collectively attracted $2.5 billion in investment in 2019.*

Nearly 600 unique local companies raised funding in the past 10 years. The chart to the right illustrates the industry sector composition of the unique companies receiving investment in each of the past 10 years. The contributions of energy and industrial sectors have declined for several years while the emphasis on hardware and robotics has increased while software and life sciences has remained fairly consistent.

* In 2019 VW Group announced a $2.6 billion investment in Argo AI ($1 billion cash and $1.6 billion contribution of VW’s Autonomous Intelligent Driving Division); for this report only the $1 billion cash investment is included in (Hardware & Robotics). Further, in 2017, Ford committed $1 billion to Argo AI. Press releases from Ford and Argo AI described the financing round as a $1 billion commitment over five years. For the purposes of this report, it was assumed that $200 million would be invested each year over the six year period (2017-2022).

In 2019 Toyota Motor Corp., Softbank Vision Fund and Denso, Inc. invested $1 billion into Uber ATG, which was spun out as a separate entity. For the purpose of this report the investment has been included in (Hardware & Robotics) and allocated to VC and corporate ratably (page 1).

In 2019 Amazon, Inc., Sequoia Capital and T. Rowe Price invested $600 million in Aurora; for the purpose of this report $300 million was allocated to the Pittsburgh operation (Hardware & Robotics) and then such investment was allocated to VC and corporate ratably (page1).
Reduction in supply of local funding

The chart below estimates the annual supply of uncommitted funds at venture capital firms in the Pittsburgh region. This analysis considers the timing of new fund closings and assumes that a firm will commit 25% of a new fund’s capital during each of the first four years post-closing. If a fund is managed by partners who are located outside of the Pittsburgh region, the amount of the fund’s capital that is “located” in Pittsburgh is determined by multiplying by the percentage of the fund’s partners who are located in the region.

Despite the emergence of several new funds over the past few years, including Cyto Ventures and Next Act Fund, only one brand new venture fund, Mountain State Capital, raised capital in 2019. In addition, some existing funds, Birchmere Ventures, iNetworks and Next Act Fund, had closings on additional capital in 2019. Despite this activity the estimated supply of local VC funding remains very low. This is largely a function of the venture capital life cycle as several of the region’s larger funds are nearing the end of their current funds and haven’t closed or announced new funds yet. This will be an important trend to monitor over the next 12-24 months, as a healthy local funding ecosystem streamlines the fundraising process for local startups and retains more of the financial rewards of successful exits in the Pittsburgh region.

Source: Innovation Works and Pittsburgh VCs
More than 103 Pittsburgh companies exited in the period from 2010-2019, generating over $10.7 billion in disclosed exit values. Since the terms of many deals are never disclosed, the total value of exit proceeds in this window is larger than the disclosed value.

Acquisitions have had the added benefit of drawing technology companies to our region. Amazon, Aptiv, Bosch, IBM, Microsoft, NetApp, Philips and Smith & Nephew are all examples of tech companies with a significant and growing local presence as a result of startup acquisitions.

2019 featured six exits with disclosed values of more than $387 million. Companies that exited in 2019 represented an assortment of industries, including oncology, clean tech, big data, biotechnology, medical devices and IT infrastructure.

Each successful exit strengthens the regional tech ecosystem. The investors realize a positive return and are more likely to invest in the region again. Other investors learn of the success and consider Pittsburgh as a more attractive investment destination. The founders and employees receive windfall gains and may stimulate the ecosystem as angel investors or mentors in addition to being financially well-positioned to pursue new ventures themselves.

### Period 2010–2019:

<table>
<thead>
<tr>
<th>103 companies</th>
<th>$10.7 billion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total value of exits</strong> (disclosed and undisclosed)</td>
<td></td>
</tr>
</tbody>
</table>

### Representative deals

<table>
<thead>
<tr>
<th>GiftCards.com acquired by Blackhawk Network 2016</th>
<th>Net Health acquired by The Carlyle Group 2017</th>
<th>M*Modal acquired by 3M 2018</th>
<th>Cancer Treatment Services International acquired by Varian Medical Systems 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krystal Biotech IPO 2017</td>
<td>Avere Systems acquired by Microsoft 2018</td>
<td>VoIP Innovations acquired by Sangoma Technologies 2019</td>
<td></td>
</tr>
<tr>
<td>Think Through Learning acquired by Imagine Learning 2016</td>
<td>TandemLife acquired by LivaNova 2018</td>
<td>StelKast acquired by Globus Medical 2019</td>
<td></td>
</tr>
<tr>
<td>Thar Pharmaceuticals acquired by Grunenthal 2016</td>
<td>NoWait acquired by Yelp 2017</td>
<td>The Efficiency Network acquired by Duquesne Light 2019</td>
<td></td>
</tr>
<tr>
<td>ModCloth acquired by Jet.com 2017</td>
<td>Wombat Security Technologies acquired by Proofpoint 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wombat Security Technologies acquired by Proofpoint 2018</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

March 2020
Pittsburgh attracts investors from around the world

**Pittsburgh region**
- Active X-it
- Adams Capital Management
- AGSM
- Birchmere Ventures
- BlueTree Capital Group
- Draper Triangle Ventures
- Eagle Ventures
- Idea Foundry
- iNetworks
- Innovation Works
- **Mountain State Capital**
  - Newlin Investment Company
  - Next Act Fund
  - Open Fields Entrepreneurs Fund
  - Pittsburgh Equity Partners
  - Pittsburgh Life Sciences Green House
  - PLSG Accelerator Fund
  - Riverfront Ventures
  - Startbot
  - Steelbridge Labs
  - The Robotics Hub
- **TNC Ventures**
  - Topanga Partners
  - UPMC Enterprises
  - Velocity Fund Partners

**California and Western region**
- 3Lines Venture Capital
- **Altos Ventures**
  - Amazon Alexa Fund
  - ARCH Venture Partners
  - Aspect Ventures
  - AV8 Ventures
  - Blackhorn Ventures
- **Bling Capital**
  - Breakout Labs
  - BreakTrail Ventures
- **CapitalG**
  - Cota Capital
  - CureDuchenne Ventures
  - Foundation Capital
  - Founders Fund
- **Geodesic Capital**
  - Greylock Partners
  - Homebrew
  - Illumina Ventures
  - Indie.vc
  - Intel Capital
- **Keiretsu Forum**
  - Kleiner Perkins Caufield & Byers
  - Lightspeed Venture Partners
  - Lucas Venture Group
  - Menlo Ventures
  - Motus Ventures
  - NewGen Capital
  - Norwest Venture Partners
  - Oriza Ventures
  - Partech Ventures
  - Paxion Capital Partners
- **Plexo Capital**
- **Right Side Capital Management**
- Riverwood Capital Group
- Salesforce Ventures
- **Sequoia Capital**
  - Silverton Partners
  - Space Angels Network
  - Stout Street Capital
  - Tech Coast Angels
  - Tridel Capital
- **Trucks VC**
- **Tsingyuan Ventures**
- **Uber**
  - Western Digital Capital
  - Westly Group
  - WRV
  - Y Combinator
More than 270 unique venture capital firms, angel groups and strategic investors have made investments in Pittsburgh companies in the past five years. The map below contains a sampling of these firms, including 39 firms – listed in bold font – that made their first investments in the region in 2019.
In a comparison of the 40 most populous metropolitan regions in the United States, where Pittsburgh ranks 27th in population, Pittsburgh ranked 15th in deals per million residents in 2019. Pittsburgh ranked 20th in the total number of funding rounds in the past 10 years.

**Number of venture rounds per million residents – 2019**

<table>
<thead>
<tr>
<th>Metropolitan Region</th>
<th>Number of Rounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco-Oakland-Fremont, CA</td>
<td>437</td>
</tr>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA</td>
<td>323</td>
</tr>
<tr>
<td>Boston-Cambridge-Quincy, MA-NH</td>
<td>155</td>
</tr>
<tr>
<td>Chicago-Naperville-Joliet, IL-IN-WI</td>
<td>145</td>
</tr>
<tr>
<td>Austin-Round Rock, TX</td>
<td>133</td>
</tr>
<tr>
<td>Seattle-Tacoma-Bellevue, WA</td>
<td>106</td>
</tr>
<tr>
<td>San Diego-Carlsbad-San Marcos, CA</td>
<td>88</td>
</tr>
<tr>
<td>New York-Northern New Jersey-Long Island, NY-NJ-PA</td>
<td>71</td>
</tr>
<tr>
<td>Los Angeles-Long Beach-Santa Ana, CA</td>
<td>58</td>
</tr>
<tr>
<td>Boulder, CO</td>
<td>55</td>
</tr>
<tr>
<td>Portland-Vancouver-Beaverton, OR-WA</td>
<td>48</td>
</tr>
<tr>
<td>Indianapolis-Carmel, IN</td>
<td>43</td>
</tr>
<tr>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>43</td>
</tr>
<tr>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE-MD</td>
<td>39</td>
</tr>
<tr>
<td>Pittsburgh, PA</td>
<td>38</td>
</tr>
<tr>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>37</td>
</tr>
<tr>
<td>Nashville-Davidson-Murfreesboro-Franklin, TN</td>
<td>36</td>
</tr>
<tr>
<td>Las Vegas-Henderson-Paradise, NV</td>
<td>34</td>
</tr>
<tr>
<td>Minneapolis-St. Paul-Bloomington, MN-WI</td>
<td>33</td>
</tr>
<tr>
<td>Atlanta-Sandy Springs-Marietta, GA</td>
<td>27</td>
</tr>
<tr>
<td>Milwaukee-Waukesha-West Allis, WI</td>
<td>26</td>
</tr>
<tr>
<td>Baltimore-Towson, MD</td>
<td>25</td>
</tr>
<tr>
<td>San Antonio-New Braunfels, TX</td>
<td>23</td>
</tr>
<tr>
<td>Miami-Fort Lauderdale-Pompano Beach, FL</td>
<td>21</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>20</td>
</tr>
<tr>
<td>Columbus, OH</td>
<td>20</td>
</tr>
<tr>
<td>Kansas City, MO-KS</td>
<td>18</td>
</tr>
<tr>
<td>Tampa-St. Petersburg-Clearwater, FL</td>
<td>17</td>
</tr>
<tr>
<td>Cincinnati-Middletown, OH-KY-IN</td>
<td>16</td>
</tr>
<tr>
<td>Houston-Sugar Land-Baytown, TX</td>
<td>16</td>
</tr>
<tr>
<td>Providence-New Bedford-Fall River, RI-MA</td>
<td>15</td>
</tr>
<tr>
<td>Sacramento-Arden-Arcade-Roseville, CA</td>
<td>14</td>
</tr>
<tr>
<td>St. Louis, MO-IL</td>
<td>14</td>
</tr>
<tr>
<td>Virginia Beach-Norfolk-Newport News, VA-NC</td>
<td>14</td>
</tr>
<tr>
<td>Orlando-Kissimmee, FL</td>
<td>12</td>
</tr>
<tr>
<td>Charlotte-Gastonia-Concord, NC-SC</td>
<td>12</td>
</tr>
<tr>
<td>Jacksonville, FL</td>
<td>6</td>
</tr>
<tr>
<td>Bridgeport-Stamford-Norwalk, CT</td>
<td>6</td>
</tr>
<tr>
<td>Cleveland-Elyria-Mentor, OH</td>
<td>4</td>
</tr>
<tr>
<td>Riverside-San Bernardino-Ontario, CA</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: PitchBook and US Census
In 2019, Pittsburgh ranked 25th among the 40 most populous metropolitan areas in dollars invested per capita. Pittsburgh ranked 21st in total dollars invested over the past 10 years.

### Dollars invested per capita – 2019

<table>
<thead>
<tr>
<th>City Name</th>
<th>Dollars Invested per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco-Oakland-Fremont, CA</td>
<td>8,713</td>
</tr>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA</td>
<td>5,825</td>
</tr>
<tr>
<td>Boston-Cambridge-Quincy, MA-NH</td>
<td>2,224</td>
</tr>
<tr>
<td>San Diego-Carlsbad-San Marcos, CA</td>
<td>1,092</td>
</tr>
<tr>
<td>Chicago-Naperville-Joliet, IL-IN-WI</td>
<td>1,079</td>
</tr>
<tr>
<td>New York-Northern New Jersey-Long Island, NY-NJ-PA</td>
<td>1,078</td>
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<td>Austin-Round Rock, TX</td>
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<td>Seattle-Tacoma-Bellevue, WA</td>
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<tr>
<td>Los Angeles-Long Beach-Santa Ana, CA</td>
<td>623</td>
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<td>Las Vegas-Henderson-Paradise, NV</td>
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<td>181</td>
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<td>Phoenix-Mesa-Scottsdale, AZ</td>
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<td>Indianapolis-Carmel, IN</td>
<td>158</td>
</tr>
<tr>
<td><strong>Pittsburgh, PA</strong></td>
<td><strong>153</strong></td>
</tr>
</tbody>
</table>

Note: The data presented above is based on raw output from the PitchBook database. PitchBook omits several of the most significant financing events in the past several years, including major financing rounds raised by Argo AI, Uber ATG and Aurora.
Pittsburgh’s local research universities exhibited a nearly threefold increase in the number of patents issued in the past 10 years. **Furthermore, the number of new spinout companies has increased 131% and the number of investment disclosures — a leading indicator of patent and license activity — increased 178%.** This ramped up activity at the front end of the commercialization pipeline bodes well for entrepreneurial efforts in coming years.

Local research universities attracted more than $10 billion in research funding in past decade. The University of Pittsburgh consistently ranks among the top recipients of National Institutes of Health (NIH) funding. Additionally, in the past decade local startups attracted more than $190 million in federal Small Business Innovation Research (SBIR) grant funding and millions more in other state, federal and foundation grants. In 2019 alone, local technology companies received more than $24 million in other government and private research grants. These grants fund innovation without diluting founders or investors.

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### Combined research budgets of Pittsburgh research universities ($ millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$984</td>
</tr>
<tr>
<td>2011</td>
<td>$1,068</td>
</tr>
<tr>
<td>2012</td>
<td>$1,067</td>
</tr>
<tr>
<td>2013</td>
<td>$1,049</td>
</tr>
<tr>
<td>2014</td>
<td>$974</td>
</tr>
<tr>
<td>2015</td>
<td>$974</td>
</tr>
<tr>
<td>2016</td>
<td>$984</td>
</tr>
<tr>
<td>2017</td>
<td>$1,023</td>
</tr>
<tr>
<td>2018</td>
<td>$1,220</td>
</tr>
<tr>
<td>2019</td>
<td>$1,288</td>
</tr>
</tbody>
</table>

Source: Carnegie Mellon University, Duquesne University and the University of Pittsburgh

### Patent generation and licenses from Pittsburgh research universities

<table>
<thead>
<tr>
<th>Year</th>
<th>Patents Issued</th>
<th>Licenses, Options, and Other Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>197</td>
<td>61</td>
</tr>
<tr>
<td>2011</td>
<td>244</td>
<td>79</td>
</tr>
<tr>
<td>2012</td>
<td>280</td>
<td>82</td>
</tr>
<tr>
<td>2013</td>
<td>322</td>
<td>96</td>
</tr>
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<td>2014</td>
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<td>2015</td>
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<td>2017</td>
<td>360</td>
<td>186</td>
</tr>
<tr>
<td>2018</td>
<td>406</td>
<td>180</td>
</tr>
<tr>
<td>2019</td>
<td>373</td>
<td>178</td>
</tr>
</tbody>
</table>

Source: Carnegie Mellon University, Duquesne University and the University of Pittsburgh
Growth in Pittsburgh’s technology economy took many forms in 2019: direct investment, company acquisitions, expansion of operations from some of the world’s biggest names in tech, and new campus initiatives to further increase commercialization and entrepreneurship. In quotes and blog posts, here’s a snapshot of the region’s progress from some of the people making deals happen or reflecting on them.

“Pittsburgh’s tech industry has grown significantly over the past several years, and I am proud that Duolingo’s roots are here. We’re proud to be a part of this city’s renewal and resurgence and continue to tout Pittsburgh as a great place to start a business and a great place to live.”

Luis von Ahn  
Co-founder and CEO, Duolingo

“The investment opportunities in Pittsburgh are top notch. The ecosystem is full of hard working entrepreneurs and employees who are focused on big, challenging technical problems and committed to building enduring companies for the long term.”

Laela Sturdy  
General Partner at CapitalG

“Pittsburgh has been a hotbed of tech for a while, which is why we have made it a priority to visit and invest in over the past several years. I’m not surprised they landed their first unicorn last year - it won’t be long until there’s a half dozen, and we hope to be invested in some of them.”

Victor Gutwein  
Founder & Managing Partner, M25

“Pittsburgh continues to amaze me about how we attract outside investors. Corporate investors, venture capitalists, and individual and syndicated angels from California, Chicago, New York and other major startup hubs want to evaluate and invest in opportunities here. Pittsburgh’s deal flow is competing with the deal flow on the West and East Coasts - enough for investors to pay attention to our city and spend their cash here. That sends a strong message.”

Catherine Mott  
Founder & CEO, BlueTree Venture Fund and BlueTree Allied Angels

“Pittsburgh has continuously set the bar for growth in technology and bringing valuable talent that excites potential venture capitalists to invest in startups; robotics startup specifically. It’s been an incredible city for connections to amazing robotic companies and universities, as well as being a booming tech hub for our employees to live and thrive in.”

Jake Loosararian  
Founder & CEO at Gecko Robotics

“Pittsburgh has a level of both technical talent and new company formation that is truly impressive, particularly in the areas of autonomy, robotics, machine learning and advanced software design. The proximity of world class research universities to leading industrial companies combined with a strong ecosystem of investors, incubators and accelerators makes Pittsburgh a unique entrepreneurial hub. We look forward to working with more promising startups in the region.”

Dave Famolari  
Hearst Ventures, Managing Director

March 2019
Pittsburgh is a great place to grow a robotics company. The talent coming out of the local universities is outstanding. The quality of life is a big draw to attract top candidates from all over the country. Pittsburgh’s storied hard working culture yields businesses that are all about showing the goods and building fundamentally strong business models. Pittsburgh’s grit stands out in the crowd, compared to the high gloss startups of other cities.

John Thornton
CEO, Astrobotic

Next Act Fund (NAF), a woman-focused angel investment fund, now in its fourth year has direct investments in 19 companies both locally and nationally. What is exciting is that the quality of the deals we are seeing has continued to improve since we were founded. We are now actively syndicating with other groups/funds across the country. This opens the door for outside investment to come in to our market for our local entrepreneurs. We are establishing these relationships in order to deliver larger dollar investments into our women led companies. It’s a win-win for all!

Yvonne Campos
Founder, Next Act Capital

As an AI-focused venture fund, we have been very impressed with the world-class technical talent and entrepreneurial energy that we have seen in the Pittsburgh ecosystem. Whether it is defining the future of autonomous transportation, or building the vision of the next generation smart city, or applying advanced robotics to create industry scale, big ideas are being developed in this region. We have made our first investment in Pittsburgh and are looking to grow our portfolio here and be an active member of this vibrant community.

Salim Teja
Radical Ventures

Allos Ventures has been active in Pittsburgh since our launch in 2010, but over the past few years we’ve seen an increase in attractive deal flow, become more aware of the city’s thriving and supportive startup ecosystem, and been impressed by the availability of the strong engineering talent necessary to build highly successful technology companies. Maven Machines is a great example of the high potential companies being launched in Pittsburgh. We were thrilled to have the opportunity to lead Maven’s recent financing round and plan to increase our level of activity in the city as we look for additional investment opportunities.

John McIlwraith
Co-founder & Managing Director, Allos Ventures

Pittsburgh’s technology sector is hitting its stride, and the foundation that was laid over the past two decades has resulted in an increasing number of high-growth companies led by experienced entrepreneurs with deep technical and industry know-how. Since establishing our Pittsburgh office in 2019, Mountain State Capital has been impressed with both the quantity and quality of the local seed-stage investment opportunities, and we look forward to participating in the region’s continued growth for years to come.

Matt Harbaugh
Co-Founder & Managing Director, Mountain State Capital

As Midwest investors, we spend a lot of our time investing “between the coasts,” and compared to many other cities, Pittsburgh continues to impress us with its depth of talent and quality of companies. Having institutions like CMU churning out top engineers and engaging in groundbreaking research, as well as a lower operating cost than coastal cities, Pittsburgh is prime to be one of the next great tech hubs.

Scott Stern
Vice President, Origin Ventures
The following were among the Pittsburgh companies completing significant funding rounds in 2019:

**ALung Technologies, Inc.**
ALung is the leading provider of low-flow extracorporeal carbon dioxide removal (ECCO2R) technologies for treating patients with acute respiratory failure.

[www.alung.com](http://www.alung.com)
CEO: Pete DeComo
Investors: Abiomed, Accelerator Fund, Allos Ventures, Altos Ventures, Birchmere Ventures, Blue Tree Venture Fund, Eagle Ventures, Innovation Works, Philips, Riverfront Ventures, SEA Venture Capital Fund, Smithfield Trust Company, UPMC Enterprises, West Capital Advisors and other individual investors

**Argo AI**
Argo AI is a technology platform company working in partnership with leading automakers to integrate its self-driving system into vehicles that can be manufactured at scale for safe and reliable deployment in ride sharing and goods delivery services.

[www.argo.ai](http://www.argo.ai)
CEO: Bryan Salesky
Investors: Ford, Volkswagen (Pending Regulatory Approval)

**Ariel Precision Medicine**
Ariel has developed a proprietary precision medicine platform to support the ecosystem of clinicians, patients, pharmaceutical companies and payers working to diagnose, manage and prevent chronic disease.

[www.arielmedicine.com](http://www.arielmedicine.com)
CEO: Jessica Gibson
Investors: Pittsburgh Life Sciences Greenhouse, Innovation Works, Coal Hill Ventures and Next Act Fund

**Astrobotic**
Astrobotic Technology, Inc. is a space robotics company that seeks to make the Moon accessible to the world by building a lunar delivery service.

[www.astrobotic.com](http://www.astrobotic.com)
CEO: John Thornton
Investors: Space Angels Network, Innovation Works and other individual investors

**Aurora**
Aurora is delivering the benefits of self-driving technology safely, quickly and broadly. Its product, the Aurora Driver, will make people's lives safer, easier, and more efficient by moving them and their goods through the world. When complete, it will enable a future transportation ecosystem, bringing together automakers, logistics services, mobility services and fleet management providers.

[www.aurora.tech](http://www.aurora.tech)
CEO: Chris Urmson
Investors: Amazon, Geodesic Capital, Hyundai, Lightspeed Venture Partners, Sequoia Capital, Shell Ventures, T. Rowe Price, Greylock Partners and Index Ventures

**Conservation Labs**
Conservation Labs enables cost-effective and sustainable water use with H2know, an easy-to-install smart water monitor.

[www.conservationlabs.com](http://www.conservationlabs.com)
CEO: Mark Kovscek
Investors: Amazon Alexa Fund, Innovation Works, Mountain State Capital, Serra Ventures and Mazarine Ventures
2019 Pittsburgh investment highlights

Duolingo
Duolingo is the free science-based language education platform that has organically become the most popular way to learn languages online.
www.duolingo.com
CEO: Luis von Ahn
Investors: NewView Capital, Drive Capital, Inside Capital, Capital G, Kleiner Perkins, A-Grade Investments and Union Square Ventures

Fifth Season
Fifth Season is pioneering a new standard for fresh food with vertical farms that combine robotics and AI to grow healthy, ultra-fresh greens in Pittsburgh’s historic Braddock community. Its uniquely designed, fully automated system can efficiently and sustainably produce twice the capacity of traditional vertical farms.
www.fifthseasonfresh.com
CEO: Austin Lawrence
Investor: Drive Capital

Fitt
Fitt is a location-based platform that connects people to healthy living experiences across fitness, food, outdoors and events.
www.fitt.co/pittsburgh
CEO: Anthony Vennare
Investors: Mindbody, Mountain State Capital, Riverfront Ventures and TNC Ventures

Idelic
Idelic is revolutionizing transportation safety with advanced artificial intelligence technology while embracing our Pittsburgh roots. Our co-founders, all Carnegie Mellon University graduates, are dedicated to continuing our work to innovate, impact the world and keep drivers safe.
www.idelictech.com
CEO: Hayden Cardiff
Investors: Bain Capital Ventures, Birchmere Ventures, Carbon Ventures, Innovation Works, Origin Ventures, M25, SaaS Ventures and TDF Ventures

Gecko Robotics
Gecko Robotics mine physical data that predict when infrastructure will fail.
www.geckorobotics.com
CEO: Jake Loosararian
Investors: Drive Capital, Founders Fund, Y Combinator, Next47 and Mark Cuban

Ikos
Ikos is filling residential apartment units for rental owners and collecting unique data at scale to serve back to clients for better pricing and investment decisions.
www.ikos.rent
CEO: Steven Welles
Investors: Innovation Works, Riverfront Ventures, Birchmere Ventures, Draper and ValueStream

Edge Case Research
Edge Case Research (Edge Case) makes autonomy safe by delivering software and services to tackle the most complex AI safety problems. We offer products and services built on best practices to reduce time to market while achieving robust safety goals. Edge Case is a trusted third-party and independent source of safety information for the autonomy industry.
www.edge-case-research.com
CEO: Michael Wagner
Investor: Chris Urmson, ANSYS, Lockheed Martin Ventures, Liberty Mutual Strategic Ventures, Trucks Venture Capital and BlueTree Allied Angel
Kaarta
Kaarta transforms the real world into 3D digital twins, enabling new levels of spatial intelligence for humans and autonomous systems alike; our advanced workflow integrates our cloud platform and best-in-class reality capture systems to map and process complex built and natural environments with unprecedented speed, fidelity and ease.
www.kaarta.com
CEO: Kevin Dowling
Investors: Greensoil Investments (Toronto), Riverfront Ventures, Innovation Works, Iris Blue Partners, Intuitive Private Equity and StartBOT

LyGenesis
LyGenesis is a biotechnology company with an organ regeneration technology platform enabling a patient’s lymph nodes to be used as bioreactors to regrow functioning ectopic organs.
www.lygenesis.com
CEO: Michael Hufford, PhD
Investors: Juvenescence and Longevity Vision Fund

Niche
Niche is the leader in school search. Our mission is to make researching and enrolling in schools easy, transparent and free. With in-depth profiles on every school in America, 140 million reviews and ratings, and powerful search tools, we help millions of people find the right school for them. We also help thousands of schools highlight what’s great about their school and recruit more best-fit families.
www.niche.com
CEO: Luke Skurman
Investors: Radian Capital, Allen & Company, Tim Armstrong and Grit Capital Partners

Prodigo Solutions
Prodigo Solutions is a health care technology company that’s been developed by health care supply chain experts to improve providers’ financial control and reduce supply chain cost.
www.prodigosolutions.com
CEO: Joe Mayernik
Investors: Alliance Healthcare Partners (Majority) and UPMC Enterprises (Minority)

Peptilogics
Peptilogics is a clinical-stage biotechnology company advancing a computational discovery platform for next-generation peptide therapeutics.
www.peptilogics.com
CEO: Jonathan Steckbeck
Investors: Peter Thiel, Presight Capital, BlueTree Allied Angels and Innovation Works

RoadBotics
RoadBotics empowers cities and towns to make objective, data-driven decisions about their roads and infrastructure. We automate inspections and generate actionable data about road networks. Our detailed maps, unbiased ratings, and practical tools save time and taxpayer dollars for hundreds of communities across the country and around the world.
www.roadbotics.com
CEO: Ben Schmidt
Investors: Radical Ventures, Hyperplane Venture Capital, Innovation Works, Ekistic Ventures and Urban Us
Methodology

The data in this report comes from a combination of the CB Insights, Dow Jones VentureSource, PitchBook and ThomsonONE databases; private company data collected by Innovation Works, Inc.; and information reported by Carnegie Mellon University, Duquesne University and the University of Pittsburgh. The investment rounds tracked in these data sets were completed by companies in the Pittsburgh region from January 1, 2010 to December 31, 2019. Note that changes may occur in this report from year-to-year due to updates in third-party databases and adjustments made to best reflect the timing of investment for rounds that have “rolling closes.” For the purpose of this report, both equity investments and convertible note investments were counted as “venture” investment. The geographic boundary of the Pittsburgh region used in this report corresponds to the Pittsburgh Metropolitan Statistical area, as utilized by the U.S. Census Bureau. Throughout this report, the terms “deal” and “round” are used interchangeably and refer to a single reported round of funding. Companies may complete more than one fundraising round in a single year, in which case each round is counted as a separate “deal.”

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Initial public offerings (IPOs) can help companies raise the capital they need to accelerate growth, become market leaders and provide shareholders with greater liquidity alternatives. IPO-bound companies typically run multi-track strategies, assessing mergers and acquisitions (M&A) alongside an IPO, and evaluating listing options around the world to raise capital and deliver an optimal valuation to shareholders.

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For more than 30 years, we’ve been helping companies accelerate growth. We’ve worked with the world’s fastest-growing companies, combining our insights, experience, global resources and industry capabilities to help them develop groundbreaking approaches to achieve their market leadership aspirations.

www.ey.com/sgm

About Innovation Works

Innovation Works, Inc. (IW) invests capital, business expertise and other resources into high-potential companies with the greatest likelihood for economic impact in the Pittsburgh region. IW is the single largest investor in seed-stage companies in this region and is one of the most active seed-stage investors in the United States. In addition to the seed fund, Innovation Works, Inc. has two nationally ranked accelerators: Alphalab and Alphalab Gear. IW also manages Riverfront Ventures, LLC, an early stage venture capital fund. Innovation Works, Inc. is an initiative of the PA Department of Community and Economic Development and is partially funded by the Ben Franklin Technology Development Authority.

For more information, please visit

www.innovationworks.org
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