

# Thoughts on Building Industry Relationships:

*Leveraging the IAB & Universities:  
For Commercial Impact & PI/Student Development*

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## COVID Specific Insights from OIDA/OSA Webinars: Photonics Firms

- NFX startup survey of June: VCs are more worried than founders about COVID slowdown impact on firms; 60% of VCs say they will fund a firm without a personal meeting; VCs expect 40% decrease in valuation vs. pre-COVID
- Restricted access to university labs has caused some small firm start-ups delays, though funding partners have generally allowed continuation of payments. Pressure is on to make up time on their own in future.
- Most sector firms could serve existing customers OK, but see future challenges/concerns on new business lead generation
- Internal management, productivity has been OK and often improved; question is can quality of work and morale be sustained over the coming year if portions are distanced or on rotating shifts to enter a site.
- Consensus is large firms can respond via distributed operations, use of remote IT infrastructure, supply chain leverage, ability to use contractors/outsourcing and result in taking market share over time; while small firms are nimble but may be at risk of crowding out in terms of customer access, supply chain and balance sheet strength

# Keys to Deployment/Scaling of Innovation

## Relationship Matter!!!



Getting customer and partner mindshare

Access to investment needs

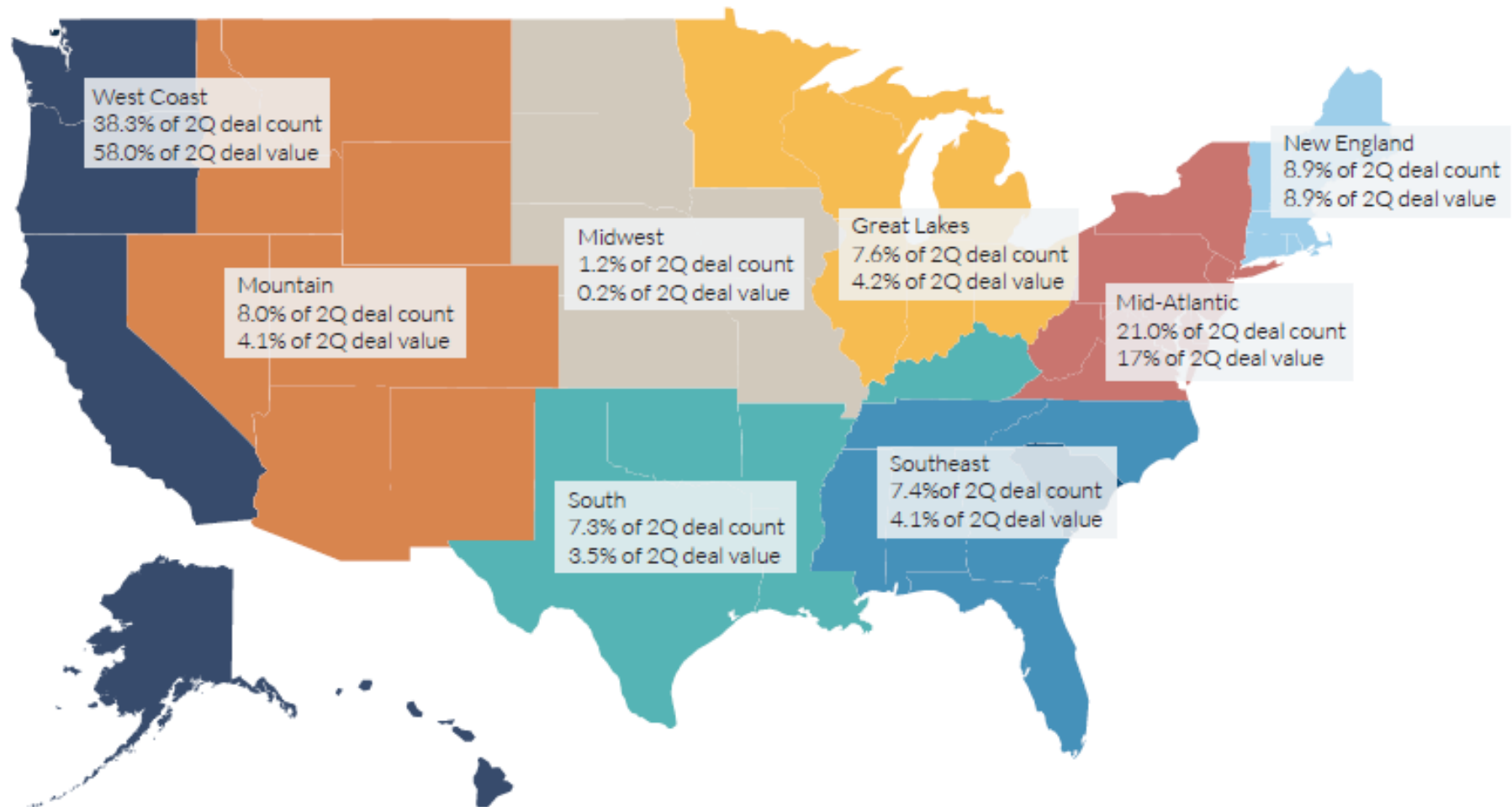
Developing and maintaining needed supply chain and delivery execution

# The State of Venture Capital in the US

- Big \$ flows, but very concentrated and anchored in rigid funding parameters/biases
- US institutional VC funds do not really serve advanced tech start-ups out of universities other than prior super-star multi-time founders with billion \$ “wins”
  - <https://www.technologyreview.com/2020/06/17/1003318/why-venture-capital-doesnt-build-the-things-we-really-need/>

# VC Flows to Areas of Critical Mass and Paths of Least Resistance

US VC deals by region



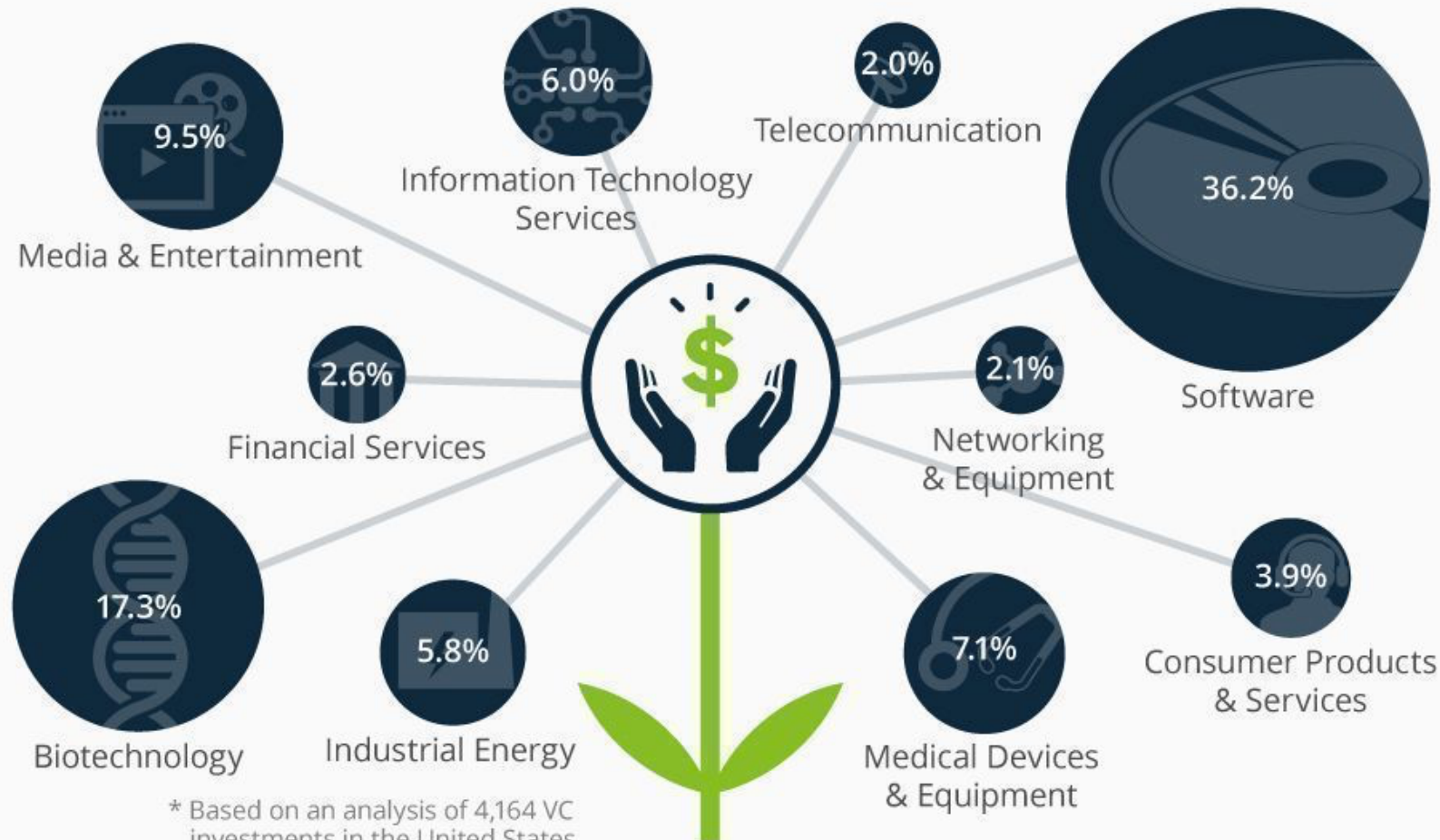
PitchBook-NVCA Venture Monitor  
\*As of June 30, 2019

*Recognize and adapt to the unique geo-local opportunities and obstacles for your situation*

8/3/20

## Which Industries Attract The Most Venture Capital?

Top 10 U.S. industry sectors by share of venture capital investment\*

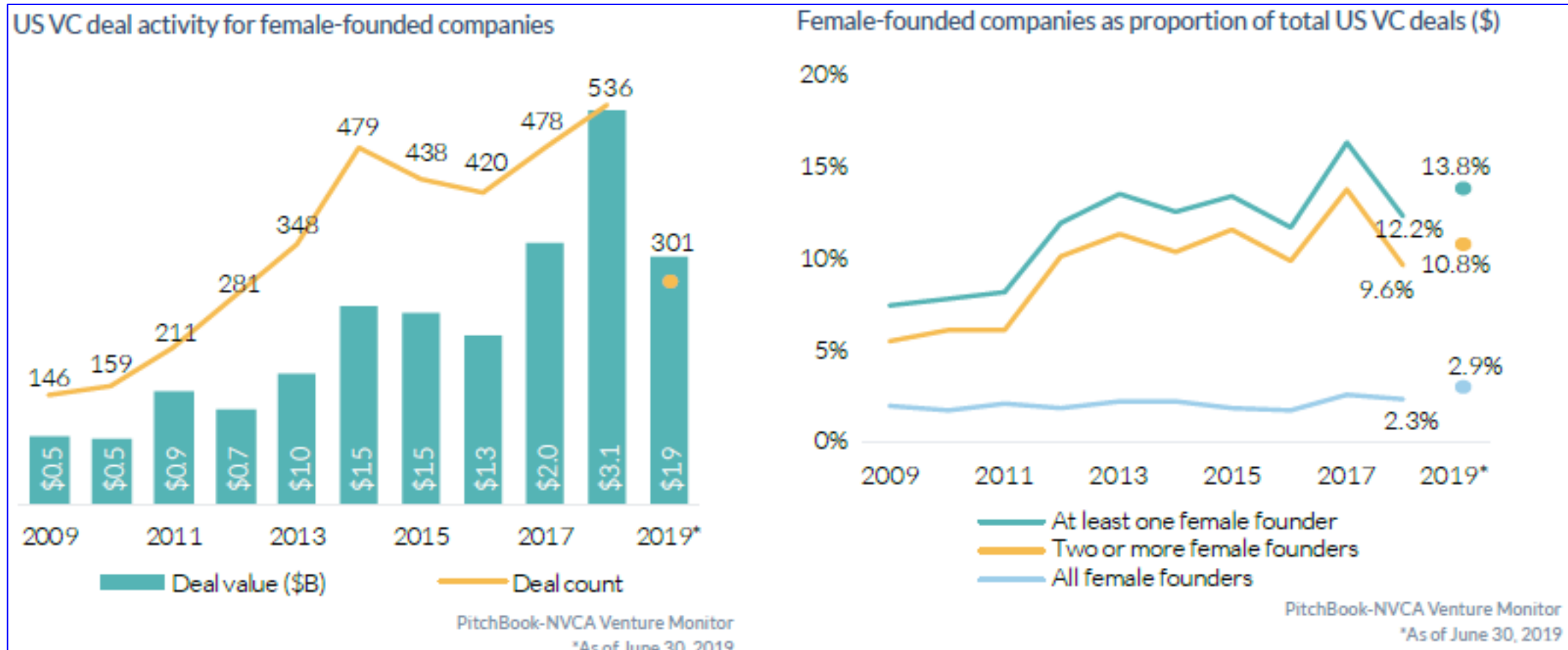


\* Based on an analysis of 4,164 VC investments in the United States

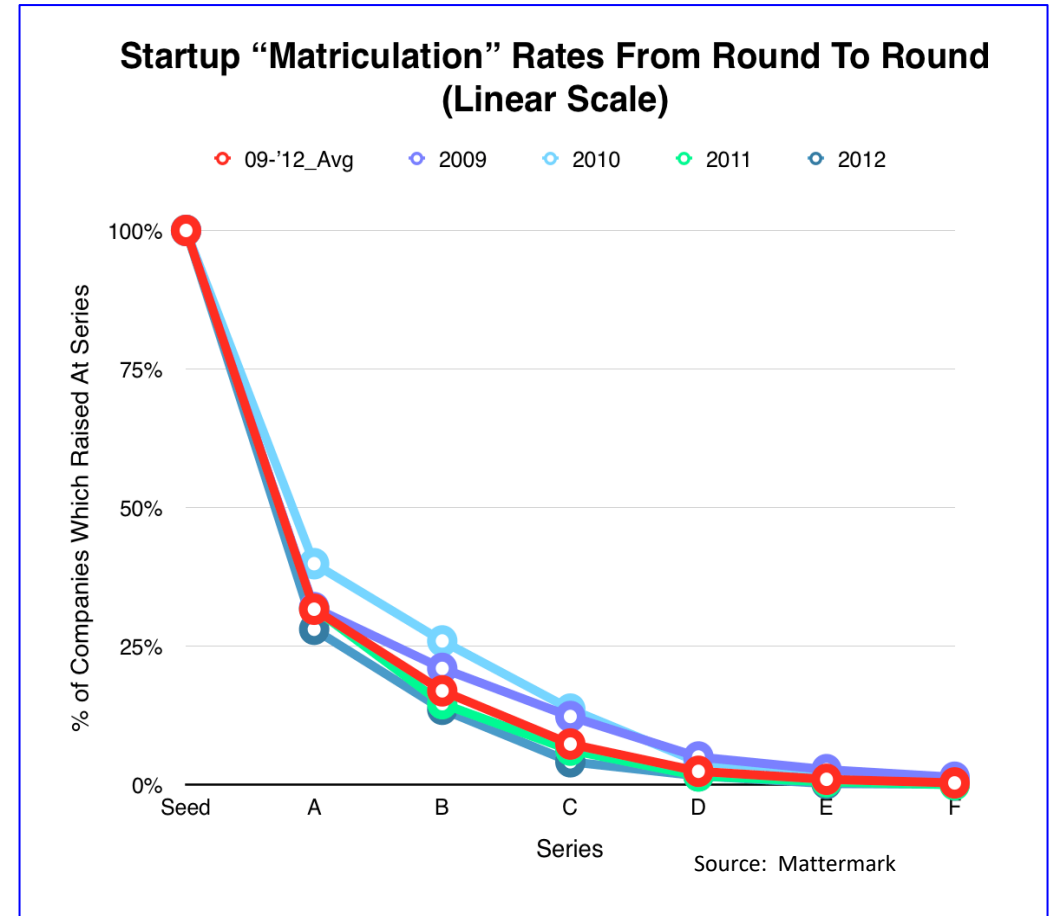
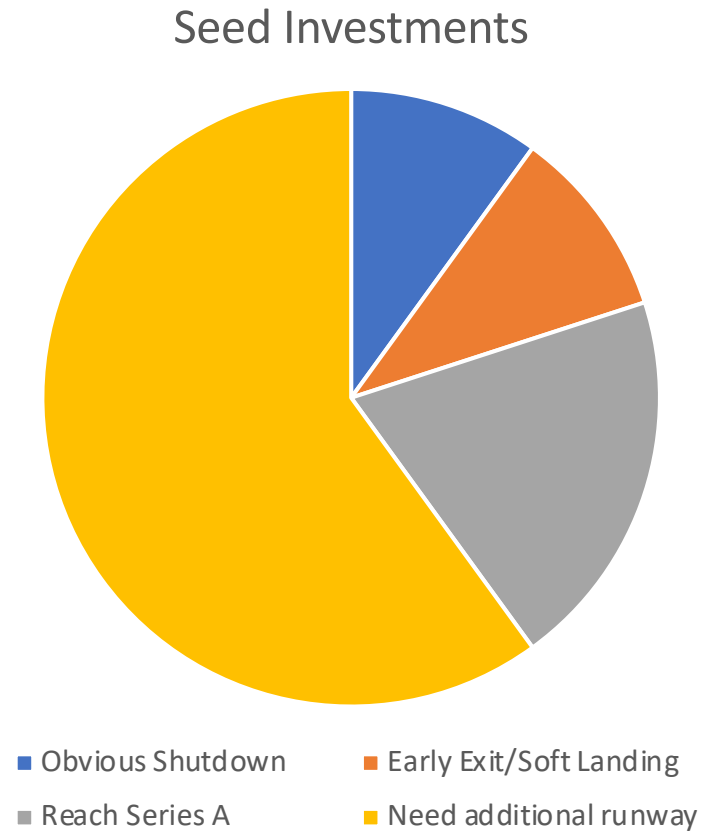
Source: Martin Prosperity Institute

- 2017 Chart to the left covers all stages, sizes of deals with larger late stage deals dominating the \$ amounts. VC capital flows have been increasingly dominated by late stage firms
- Over 90% of Institutional VC Funds that do seed/Series A US deals are located on east or west coast
- Substantial majority of US seed deals are IT or consumer focused; across 62 defines sectors tracked, less than 6% recently were bio/pharma, med devices, cleantech, materials or hardware
- <https://signal.nfx.com/>

# VC Funds: Entrenched Methods/Models; “Club” Cultures-but Changing



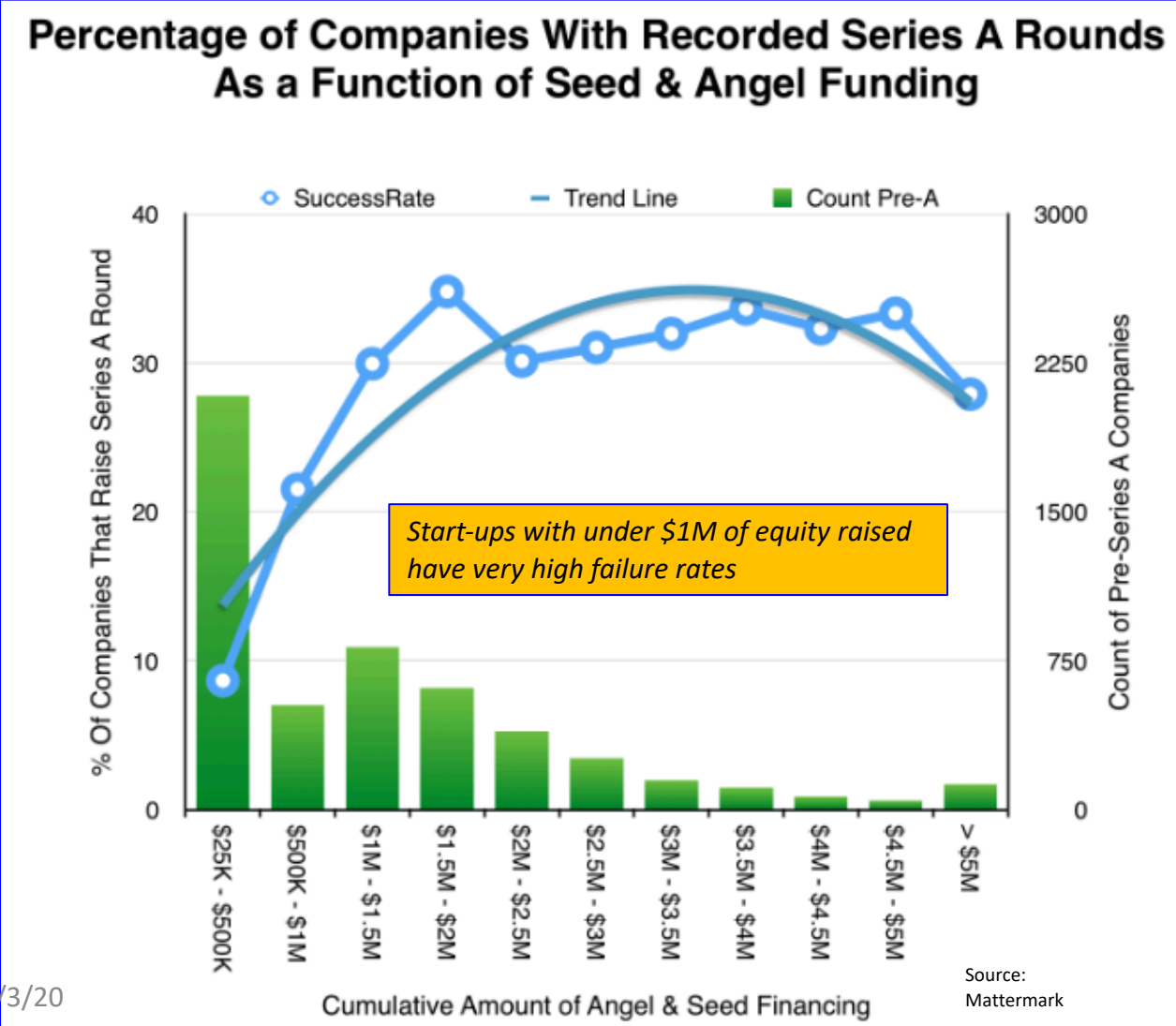
# Follow-on Funding for Seed Venture Investments is a Huge Need



*Leaping From Seed To Series A For Digital Health Startups Proves Difficult - July 17, 2020; Crunchbase*



# Many Advanced “Hard-Tech” Start-ups Leverage Grant & Contract \$: Before and After Seed/A funding



- SBIRs, Fed. Labs/programs, I-Corp, matching state funds/grants, incubator/accelerator programs, contract NRE
- Such Fund sources help get over the “hump” of proof point milestones
- ERC and university spin-offs need to put the eco-system of investment and corporate resource access in place to yield commercial traction

## Implications for ERCs

- Be creative, be pro-active
- Pursue “lean launch” techniques in your own commercial outreach efforts
- Need multi-prong approach to commercialization partnering
- Tap local, national and international constituents in your fields of relevance
  - Corporations, VCs, incubators, business schools, mentors, philanthropists

*Can the ERC “brand” be leveraged to jointly help such outreach and attain significant impact?*

## Pathways for ERC-IAB Success: Growing the Impact of ERC “Ventures”

- Consider the ERC as just a seeded venture investment:
  - *Supplement the “venture” with “Extensions” you need to develop*
- Create formal “EIR” teams to review/mentor commercial spin-off topics, plans, recruit future advisors/consultants/team and to solicit corporate/SBIR/investor support
  - <https://photonics.stanford.edu/membership> <https://ocr.yale.edu/yale-entrepreneurs-residence>
- Engage actively with relevant national trade associations business and start-up programs
- Tap the local and industry relevant VC-Angel-trade/professional society communities: in-person and virtual
- Pursue creative outreach for in-kind relationships and funding for valid-impactful products & educational programs

## Supplementing the ERC “Venture” with “Extensions”

- ERCs are an early stage venture investment to develop, build on and spawn more seed opportunities for the universities involved and related industrial partners
- Pursue corporate sponsored/directed research projects using post-docs and students
  - Access to new \$ and in-kind flows to aid commercial efforts, education and research
  - Beyond focus on large firms, be open to faster moving entrepreneurial driven firms as well as non-US firms
  - Bring in related faculty in complementary opportunities
- Create shared support networks for students with similar interests/issues
  - SLACK channels for dialog and on-going connections
  - “CIRCLES” - ex: <https://www.alumni.hbs.edu/events/circles/Pages/default.aspx>
  - Track placement and alumni networks of students into key industry eco-system players of all sizes; *did you help groom some commercial industry “superstars”*

# Models of Possible Use

- Consider multi-year corporate memberships: encourage recurring program involvement, enable mutual budget planning
- Enable a portion of fees, or separate fees, for use on certain center projects agreed upon
- Pursue extensions to the ERC programs: grow new efforts from the NSF ERC “seed” investment
  - *Enable a company employee to join a center’s lab or project part or full-time with employee paid by company funding*
  - *MS or post-doc from University team to do 3-12 month project work paid for by company on project defined by company and consistent with the lab’s work, goals.*
  - *Company management to be volunteered into Center for 1-2 days of work of technically, operational, strategic or industry outreach efforts over a minimum of 6 months*
- Create an annual national ERC “Ventures Showcase” event to enable critical mass to attract investors, partners
  - Model on incubator events such as Plug & Play, others and DOD Trusted Capital events

# Add Complementary Innovation Fellows Targeting Product Development

## Programs for Corporate Fellows: Models

- Yale & Harvard have Blavatnik philanthropic funding : “Building entrepreneurs and new business”
  - <https://blavatnik.ocr.yale.edu/people/blavatnik-fellows> <https://otd.harvard.edu/accelerators/blavatnik-biomedical-accelerator/blavatnik-fellowship/> targets working recent MBAs and PhDs for a year of productization from among projects
- UMN Medical Device Center works extensively with UMN IP plus contracted corporate projects
  - <http://www.mdc.umn.edu/index.html>
  - Proactive Industry outreach to identify industry needs to pursue via the program <http://www.mdc.umn.edu/collaborations/about.html>
  - Application driven, translational focus <http://www.mdc.umn.edu/fellows/accomplishments.html>
  - One year program for MS+/MD company staff and entrepreneurs
  - Since the Program's inception in 2008, Innovation Fellows have partnered with more than 200 entrepreneurs, physicians, investors, global institutions, and executives from leading medical device companies such as Abbott, Boston Scientific and Medtronic to solve a variety of healthcare needs, including medical devices designed for cardiovascular diseases, diabetes, cancer, neurological disorders, pediatric illness, and neo-natal care.
  - \$ supporters, plus in-kind <http://www.mdc.umn.edu/fellows/supporters.html>

# Tap and Use Relevant Trade Associations

Beyond the local and alumni university eco-system of mentors and funders, *professional and trade associations are ideal platforms: Leverage the Endorsement/Prestige of being an ERC*

- For ERC student networking and mentoring in commercialization efforts, many associations have a wealth of programs and people to help that match well
  - <https://www.osa.org/en-us/meetings/topical-meetings/the-innovation-school/>
  - <https://spie.org/industry-resources/industry-events/spie-startup-challenge?SSO=1>
  - <https://www.osa.org/en-us/meetings/webinar/2020/april/oida-response-to-covid-19-webinar-series-overview/>
  - <https://www.osa.org/en-us/meetings/webinar/2020/july/oida-webinar-series-working-together-under-the-new/>
  - <https://www.osa.org/en-us/get-involved/diversity-inclusion/>
  - <https://www.photonics.com/Articles/OSA-Foundation-Supporting-Women-in-Optics-and/a64963>

Local VCs, incubators and corporations can be good resources for female-URM to find mentoring and advice and many have particular focus in such efforts with national and virtual linkages

- <https://www.startupfunding.co/blog/31-top-accelerators-and-incubators-for-women> <http://www.goldenseeds.com/>
- <https://medium.com/@cleocapital/resources-to-find-support-and-invest-in-black-founders-17b48cbbb04d>
- <https://techcrunch.com/2020/06/02/diverse-startups-and-investors-matter/>

## The Pursuit of Bite Sizes vs. Elephant Hunting

- IF the ERC addresses a target application of high \$ volume impact, target some big gifts, or collaborations with big investors/philanthropists/corporations that have a specific focus aligned with the ERC
- Examples:
  - 2018: American Heart Association and co-investors Philips and UPMC to fund \$30M venture capital fund focused on heart disease <http://www.aphelioncapital.net/cardeation>
  - 2018: Deerfield has committed \$100 million to a new translational research alliance with Harvard University. Through a company dubbed [Lab1636](#), Deerfield will fund a number of R&D projects that bolster drug discovery and development.
    - “Instead of chiming in after a company is spun out from an academic lab, it would play a front and center role in creating those biotech startups.
    - That was followed by a tie-up with the University of North Carolina, Chapel Hill last October, in which Deerfield invested \$65 million. Slightly thereafter, Deerfield helped create a \$80 million research center at Dana Farber devoted to protein degradation.”