

Ohio Third Frontier Commission Meeting

October 18, 2022

Ohio

Department of
Development

Ohio

Third Frontier
Innovation Creating Opportunity

Call to Order, Roll Call, and Approval of the July 19, 2022, Meeting Minutes

Recognition of Exiting Member / New Member Introductions

Host Welcome

Scott Koorndyk, President - Entrepreneurs' Center

Technology Validation and Start-Up Fund (TVSF)



Program Purpose

Help transition technology from Ohio research institutions into the marketplace through Ohio startup companies

Two ways to engage the program:

- Phase 1: Validation Projects (Institutional Funds)
- Phase 2: Startup Funds (New Companies)

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Phase 1: Validation Projects



- Institutions may apply to create a pool of funds to select and advance its technologies toward commercialization
- Lead applicant must be the institution that owns the IP



Phase 1

Awards must be matched 1:1 by cash cost share from the institution for:

- \$1,000,000 Allocation
- \$200,000 to \$500,000 Allocation

No cost share requirement for:

- \$100,000 No cost share; Internship required



Phase 2: Startup Funds



- Eligible Project: Ohio startups and young companies licensing and commercializing technologies from Ohio institutions
- Awards up to \$100,000 (or \$150,000 for biomedical-related projects)
- No cost share requirements

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Future Rounds:

Round 31

- Application Opens: Oct. 21
- Questions: Oct. 28
- Proposals Due: Nov. 4
- Awards: January 2023



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Technology Validation and Start-Up Fund (TVSF) Round 30 Evaluator Recommendation

Redwood Innovation Partners

Redwood
Innovation
Partners



TVSF Round 30 Evaluation

Herb Bresler PhD, Susan Stanton PhD
October 18, 2022

Outline

- Round 30 overview
- Funding Recommendations
- Analysis and Recommendations



Round 30 Overview

- 17 Applications Totaling \$4,350,000 were reviewed.
- Funding of 5 Phase 1 applications totaling \$2,850,000 is recommended.
 - 2 Option 1 applicants of \$250,000 and \$500,000
 - 2 Option 2 applicants of \$1,000,000 each
 - 1 Option 3 of \$100,000
- Funding of 7 Phase 2 applications totaling \$850,000 is recommended.



Round 30 Overview (Continued):

- Round 30 approval rate is 71%: 5 of 5 Phase 1 applications; 7 of 12 Phase 2 applications.
 - Historical range of prior rounds is 27 to 100%

TVSF Round 30 Approval Rate by Round Phase 1/Phase 2

Round	\$ Recommended	Approval Rate
1 (APR 2012)	\$950,000	35%
2 (AUG 2012)	\$900,000	52%
3 (DEC 2012)	\$610,000	44%
4 (JUN 2013)	\$864,000	30%
5 (FEB 2014)	\$1,462,000	46%
6 (JUN 2014)	\$998,000	39%
7 (OCT 2014)	\$1,100,000	57%
8 (FEB 2015)	\$710,000	37%
9 (JUN 2015)	\$550,000	31%
10 (DEC 2015)	\$925,000	38%
11 (APR 2016)	\$1,239,000	46%
12 (OCT 2016)	\$3,537,269	46%
13 (MAR 2017)	\$1,567,500	38%
14 (SEP 2017)	\$498,832	27%
15 (DEC 2017)	\$2,250,000	38%
16 (MAR 2018)	\$2,098,600	52%
17 (SEP 2018)	\$2,100,000	42%
18 (DEC 2018)	\$1,150,000	35%
19 (APR 2019)	\$2,250,000	43%

Round	\$ Recommended	Approval Rate
20 (NOV 2019)	\$1,350,000	43%
21 (FEB 2020)	\$3,944,000	56%
22 (JUN 2020)	\$1,398,630	53%
23 (DEC 2020)	\$900,000	50%
24 (MAR 2021)	\$2,092,900	55%
25 (JUN 2021)	\$800,000	75%
26 (OCT 2021)	\$1,700,000	55%
27 (FEB 2022)	\$850,000	43%
28 (APR 2022)	\$2,499,976	64%
29 (JULY 2022)	\$850,000	100%
30 (OCT 2022)	\$3,700,000	71%
Overall	\$45,845,707	
Average	1,528,190	48%



Phase 1 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding
23-2873	Bon Secours Mercy Health Foundation	Bon Secours Mercy Health Foundation – Technology Validation Fund #3	\$250,000

Comments:

- Selection Committee balanced with health care, medical devices backgrounds and serial IT entrepreneurs
- Good network of Third-party suppliers and ESP interaction
- Fund Leaders have impressive prior track records

Phase 1 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding
23-2874	Case Western Reserve University	Phase 1- Technology Validation Start-UP Fund- Pool of Funds	\$1,000,000

Comments:

- Selection committee is strong in medical fields
- Strong track record of medical newco formation and in market products
- New emphasis on expanding research base including innovation, entrepreneurialism and commercialization



Phase 1 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding
23-2875	Ohio State University	Accelerator Awards	\$1,000,000

Comments:

- Accomplished, diverse eighteen-person selection committee
- Established 2 funding cycles per year application process
 - Funds tranched quarterly and tied to milestone completion
- Robust deal flow pipeline
- All projects have an Industry Expert

Phase 1 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding
23-2876	Research Institute at Nationwide Children's Hospital	TVSF Phase 1 Round 30 Proposal	\$100,000

Comments:

- Competent four-person selection committee
- Consistent deal flow within NCH
- Strong track record of licensing and commercializing technologies
- Well documented selection process

Phase 1 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding
23-2877	University Hospitals Health Systems, Inc.	The University Hospitals Technology Venture Fund	\$500,000

Comments:

- Well rounded ten-person selection committee
- Deal flow is consistent with amount requested for funding
- Stage gate project selection process

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2878	Band Connect	Clinical Validation & Product Development Acceleration	\$150,000	University of Cincinnati

- Band Connect addresses patient adherence to at home physical therapy assignments by providing sensor-enabled exercise equipment to collect and transfer exercise data to software to tailor exercise regimens to improve recovery.

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2880	Bowerbags LLC.	Ruck Dock	\$100,000	Air Force Research Laboratory

- Bowerbags is creating modular carrying solutions for the military and first responders to help them reduce injuries due to the heavy weight loads carried on the job.

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2881	Hyphen Innovations	Inherent Damping via Additive Manufacturing Processes for Turbine Engine Rotors	\$100,000	Air Force Research Laboratory

- Hyphen Innovations is simplifying the 3D printing of complex parts with a development process that requires less manufacturing procedures and less structural validation for dynamic systems.



Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2883	MC1R Ventures LLC	Development of a topically applied tetrapeptide MC1Ragonist as a sunless tanning agent	\$150,000	University of Cincinnati

- MC1R will develop and sell a topical compound that stimulates pigmentation without sun exposure (sunless tanning). Additionally, the compound enhances repair of damaged skin. The company plans to contract manufacturing and sell via e-commerce. Later, a related compound will be developed as a drug for treatment of skin pigment disorders.

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2884	Nichefire, Inc.	Automated natural language processing for descriptive language analysis	\$100,000	Naval Surface Warfare Center

- Nichefire will develop and commercialize a business-to-business software application that extracts qualitative and quantitative data pertaining to emerging consumer, economic, political, and societal trends.

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2887	StormImpact Inc	StormImpact -Preparing For Growth	\$100,000	Ohio State University

- StormImpact has developed software technology machine learning models and storm data dashboards that provide advanced intelligence for electric utilities predicting weather-related power outages, equipment damage, and how many customers will lose power. Technology will enable pro-active storm preparation, resource planning, and a reduction in power outage.

Phase 2 Recommended Funding

Proposal	Lead Applicant	Project Title / Product Focus	Recommended Funding	Licensing Institution
23-2889	Zvelt Therapeutics	Validation of Dual Cassette Gene Therapy Platform	\$150,000	Ohio State University

- Zvelt is commercializing a platform technology to utilize a viral gene therapy platform that simultaneously enables de-targeting of the liver, thus avoiding liver toxicity, and enables gene expression in adipose tissue. Technology will focus on rare metabolic syndromes with high disease burdens, such as patients with leptin deficiency . The platform technology could feasibly be applied to many markets including obesity, diabetes, and other diseases.

Round 30 Analysis & Recommendations

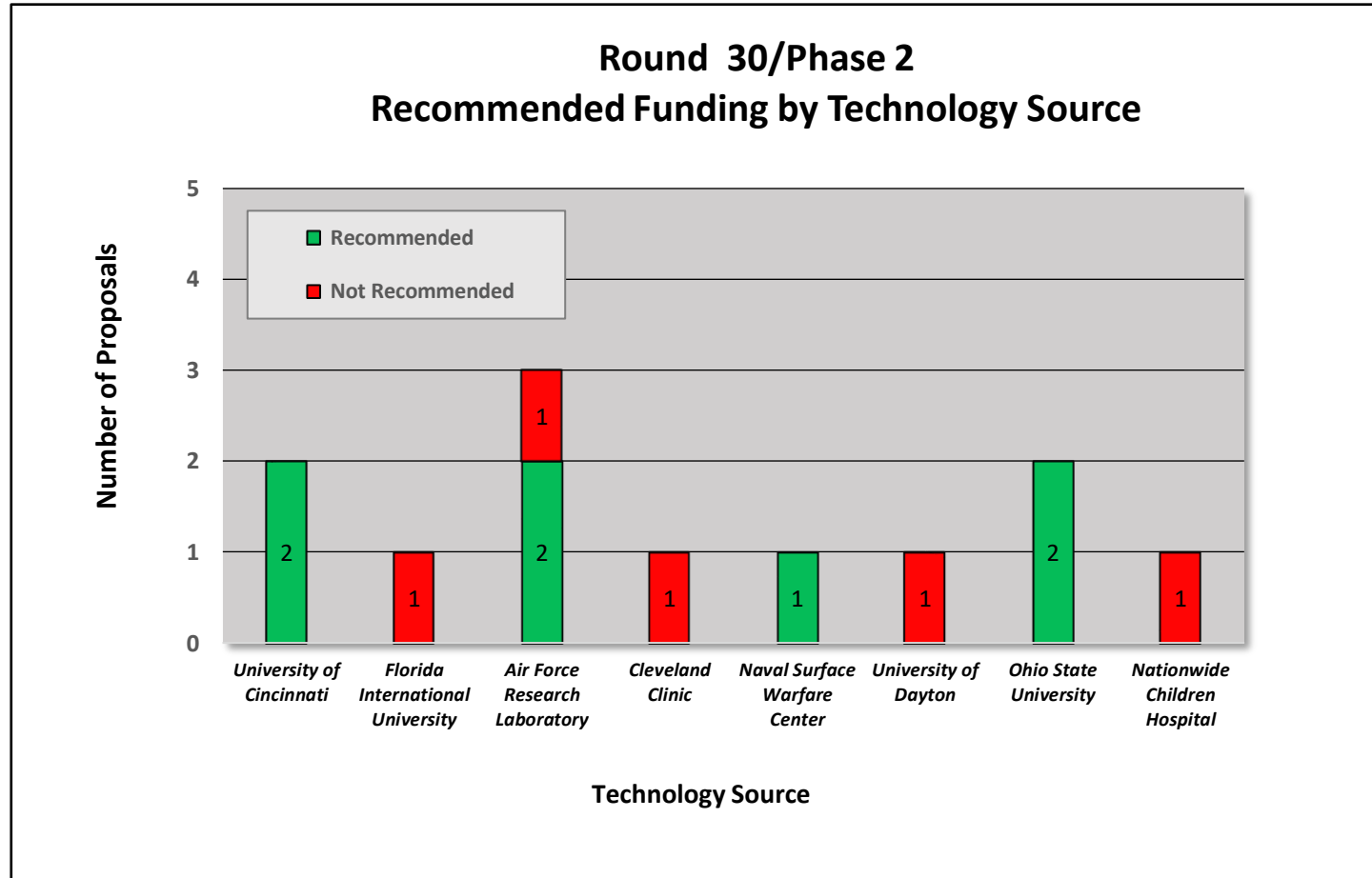


Phase 1 Carry Through and Reapplications

- Phase 1 Carry Through:
 - There were 2 Phase 2 applicant that previously received Phase 1 funding.
 - Both applications were recommended for funding.
- Phase 2 Reapplications:
 - There were 2 Phase 2 reapplications, One was a first time reapplicant and was recommended for funding.
 - One was a second time reapplicant and was not recommended for funding.

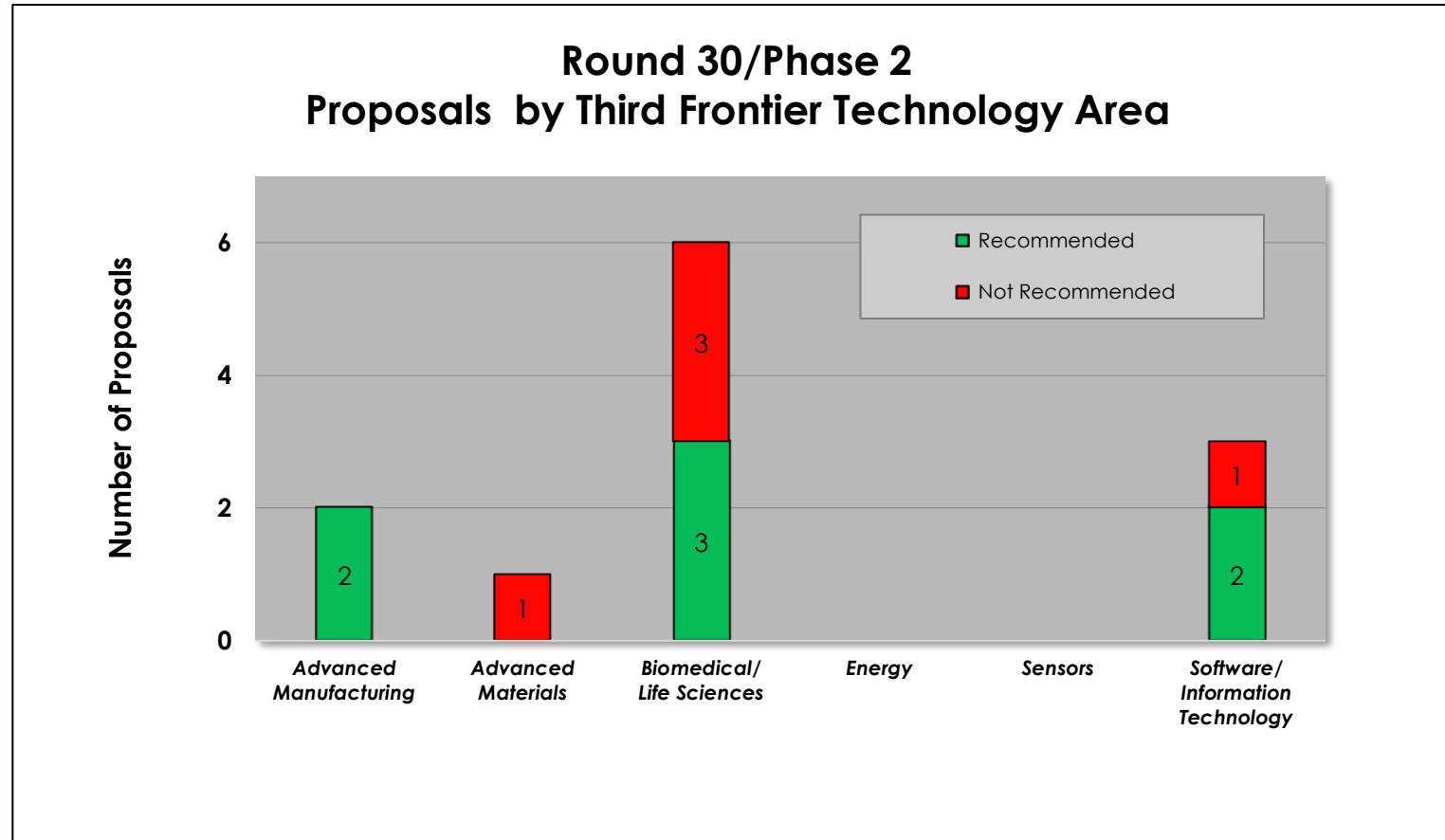


AFRL was the most active applicant



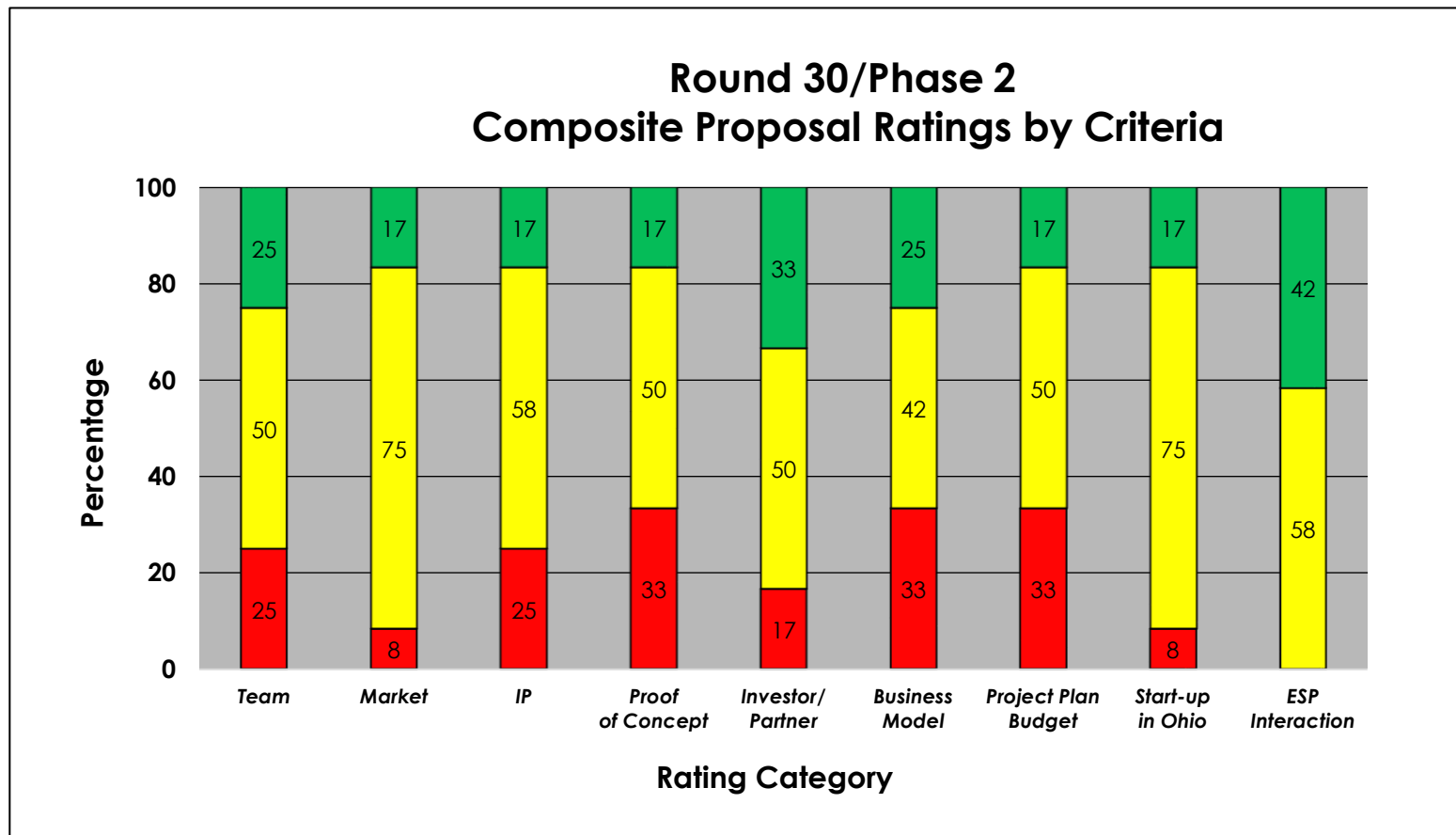
Biomedical/Life Sciences fraction is half of applicants

(50% vs Round 20 – 29 Average of 57%)



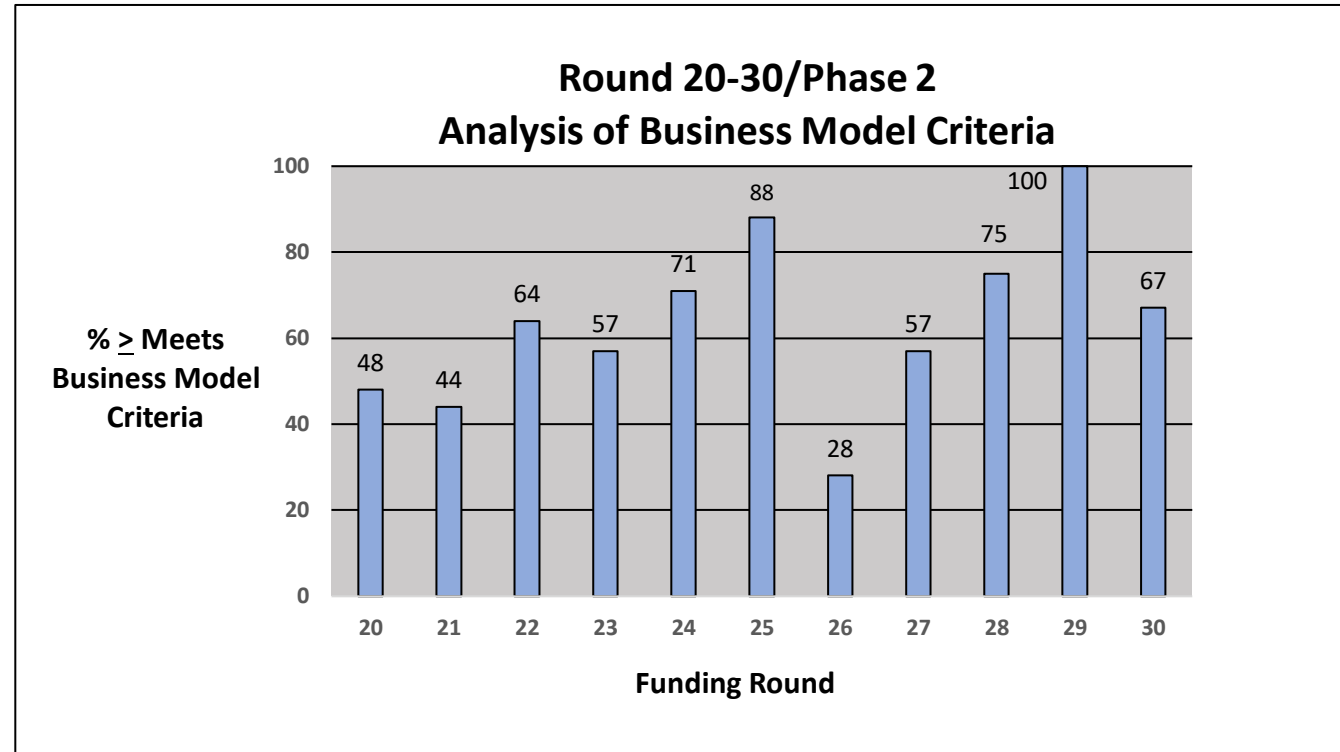
Phase 2 composite rankings show:

- Market Opportunity, then Investor / Partner were the highest rated criteria
- Proof of Concept, Business Model and Project Plan. Budget Narrative were the lowest rated criteria



Phase 2 Business Model Analysis

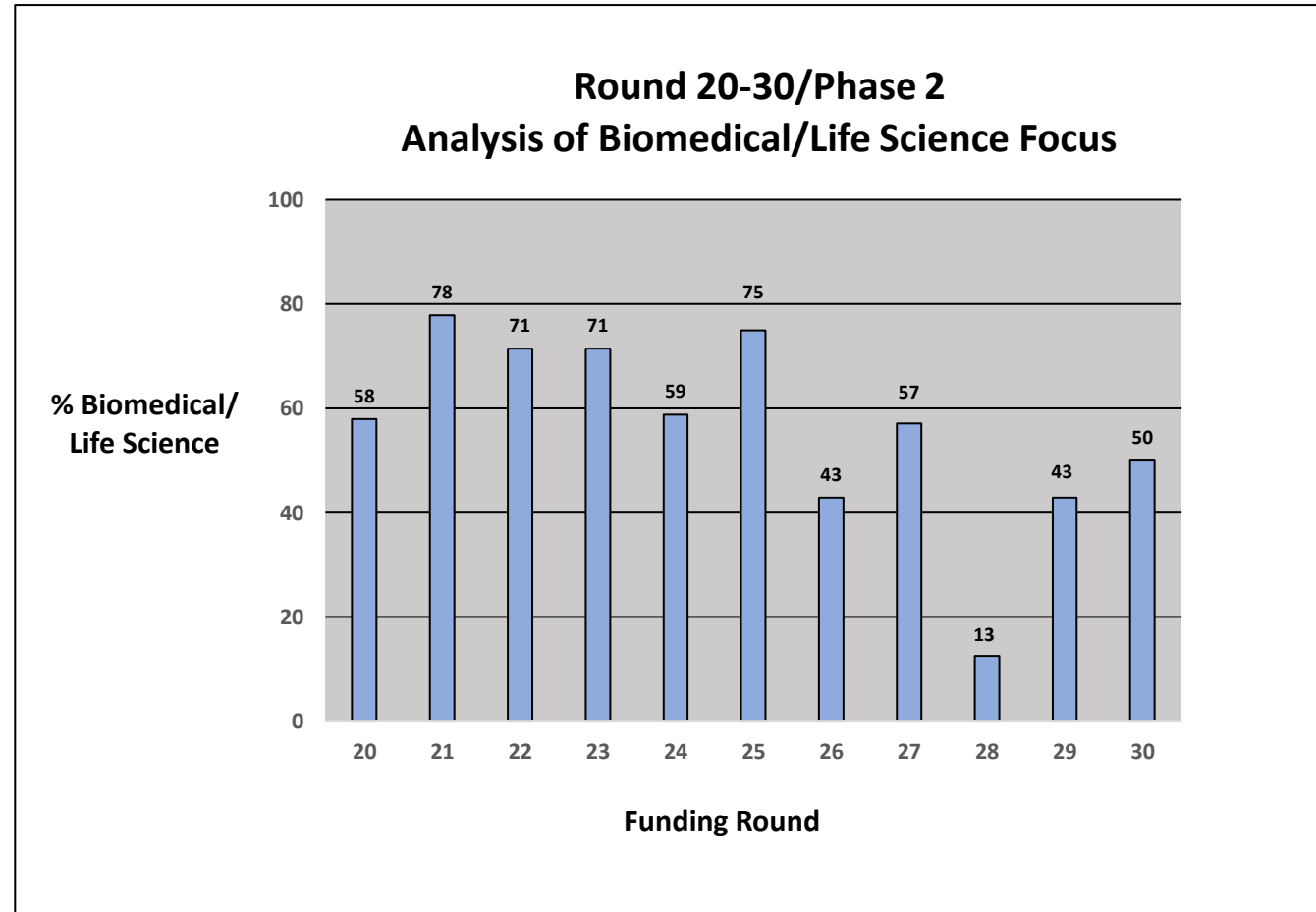
- Business model average in Round 20-23 was 53% average \geq meets
- Rounds 24 to 30 average was 69% average \geq meets



Observation: Business Model low seen in Round 26 appears to be an anomaly.

Phase 2 Biomedical/ Life Science Focus

- All 11 Rounds average 56% Biomedical/ Life Science
- Last 5 Rounds average was 42%



Technology Validation and Start-Up Fund (TVSF) Summary: Round 30 Phase 1

Proposal	Lead Applicant	Recommended Funding
FY23-2873	Bon Secours Mercy Health Foundation	\$250,000
FY23-2874	Case Western Reserve University	\$1,000,000
FY23-2875	Ohio State University	\$1,000,000
FY23-2876	Research Institute at Nationwide Children's Hospital	\$100,000
FY23-2877	University Hospitals Health Systems, Inc.	\$500,000



Technology Validation and Start-Up Fund (TVSF)

Summary: Round 30 Phase 2

Proposal	Lead Applicant	Project Title/Product Focus	Recommended Funding	Licensing Institution
23-2878	Band Connect	Monitor in home physical therapy	\$150,000	University of Cincinnati
23-2880	Bowerbags, LLC	Modular carrying solutions for military and first responders	\$100,000	Air Force Research Laboratory
23-2881	Hyphen Innovations	Improved 3D printing of turbine engine rotors	\$100,000	Air Force Research Laboratory
23-2883	MC1R Ventures, LLC	Sunless tanning agent	\$150,000	University of Cincinnati
23-2884	Nichefire, Inc.	Software tracking of market trends	\$100,000	Naval Surface Warfare Center
23-2887	StormImpact, Inc	Predicting weather related power outages	\$100,000	Ohio State University
23-2889	Zvelt Therapeutics	Gene therapy platform technology	\$150,000	Ohio State University



Metrics Update

Entrepreneurial Services Provider (ESP) Program & Pre-Seed/Seed Plus Fund Capitalization Program



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Entrepreneurial Services Provider (ESP) Program

Purpose

- Fill gaps in the entrepreneurial system for high-potential Ohio concept, seed, and early-stage technology companies
- Provide financial support to a regional network of service providers and their collaborators to assist Ohio's tech startup and early-stage companies in achieving significant growth
- The ESP Program aims to foster sustainable engines of entrepreneurial activity and technical assistance and to continue to generate visibility and excitement about entrepreneurship in Ohio

A close-up photograph of a person's hands holding a tablet computer. The person is wearing blue scrubs, and a stethoscope is visible around their neck. The background is blurred, showing what appears to be a clinical or hospital setting. The lighting is bright and natural.

Entrepreneurial Services Provider (ESP) Program

Primary Services Offered

- Advisory – Technical assistance, education, training programs, entrepreneurial advice from subject matter experts, etc.
- Technical Assistance – Assist with recruitment, business planning, customer connections, capital access planning, incubation, etc.
- Capital – Facilitate investment from individuals and institutions; growth funding; venture funding



jumpstart



Entrepreneurs'
Center



cincytech

TECHGROWTH *ohio*

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Entrepreneurial Services Provider (ESP) Program (2017 – 2021)

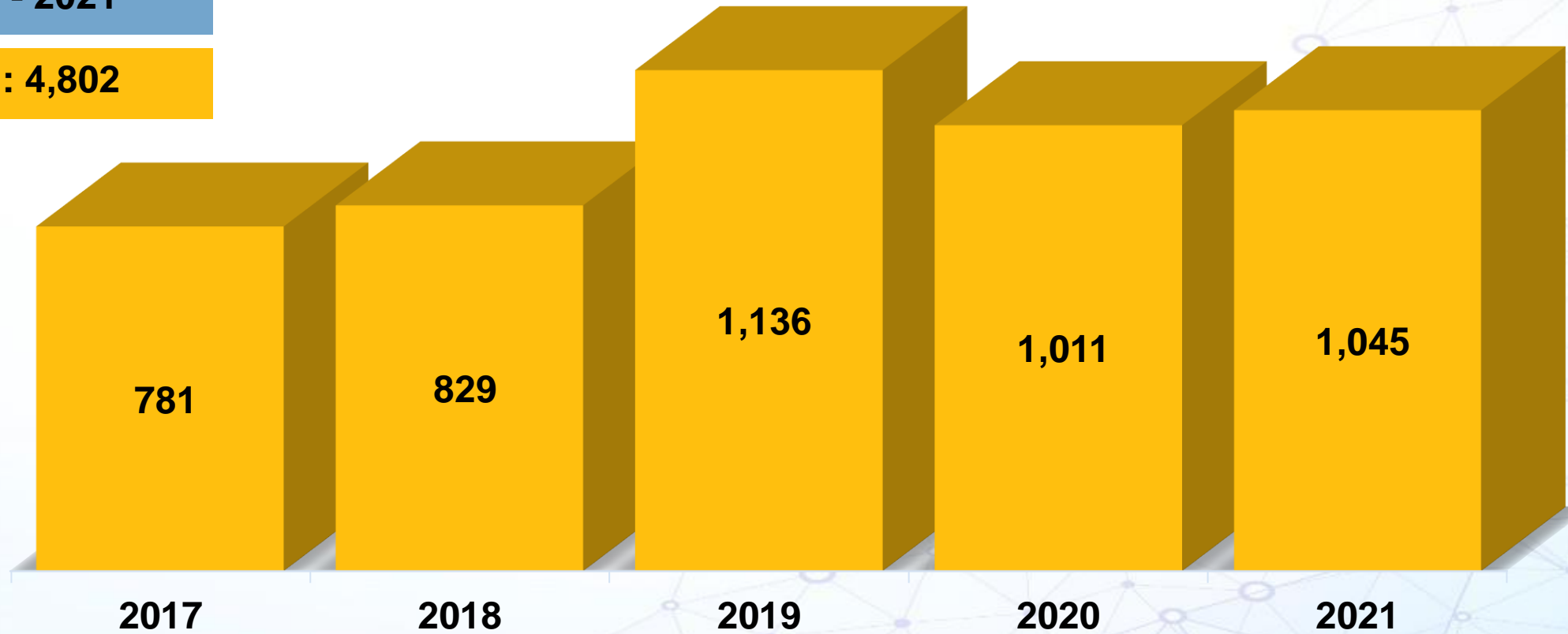




ESP – Active Clients

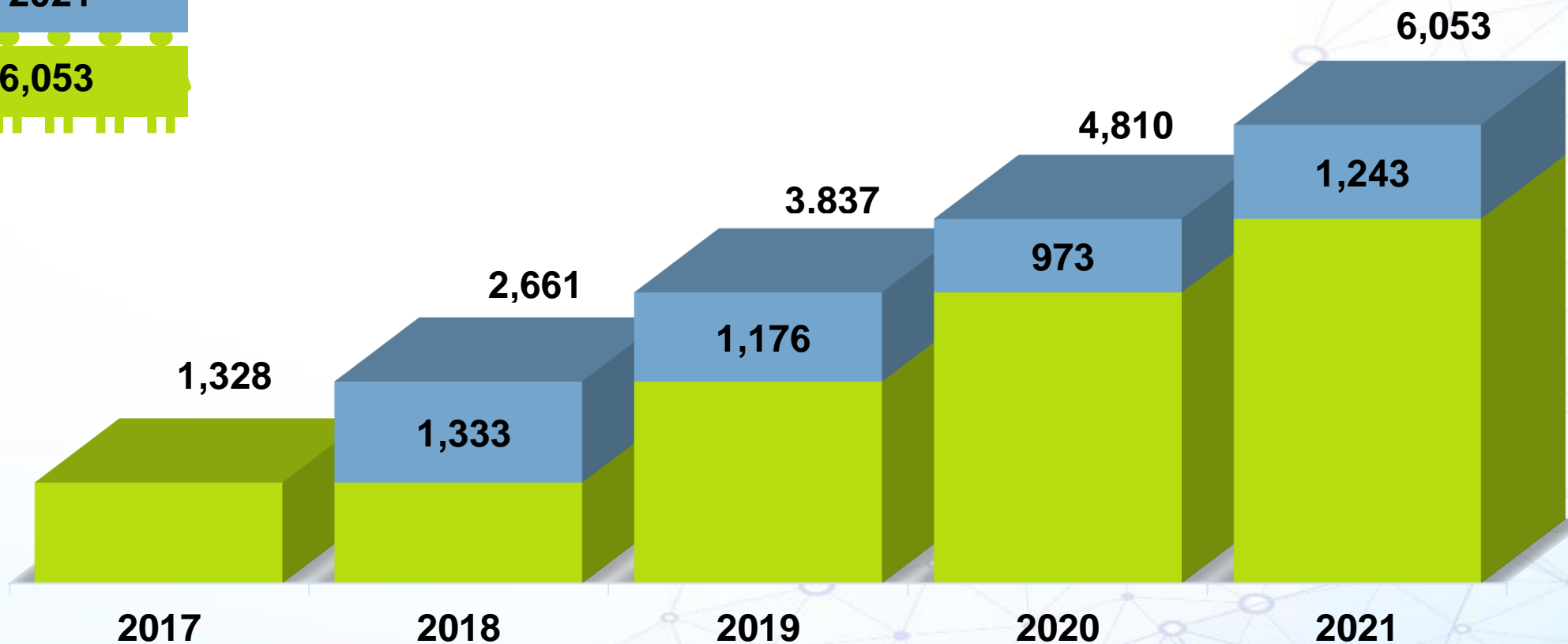
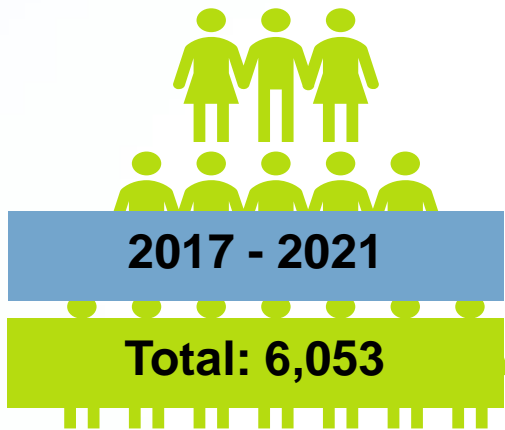
2017 - 2021

Total: 4,802



ESP – New Jobs Created

Blue indicates net new jobs created from prior year



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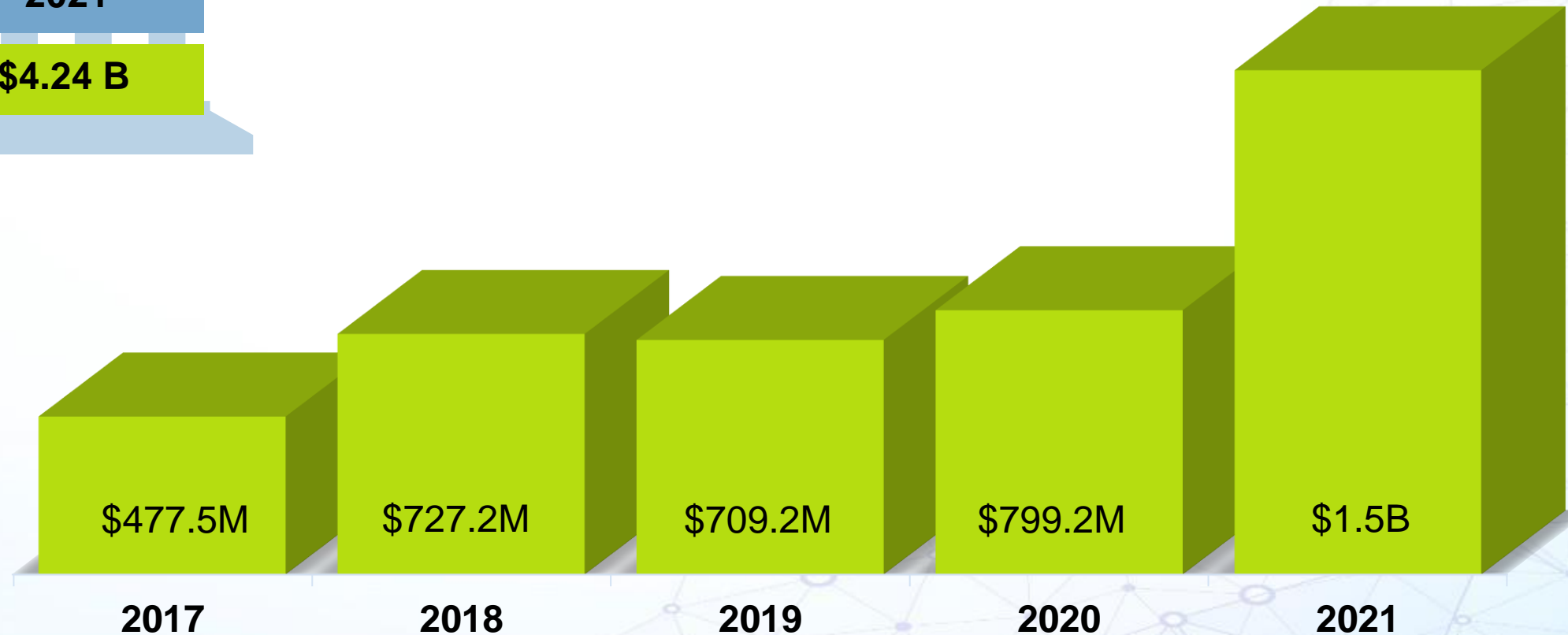


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ESP – Third Party Investment Raised

2017 - 2021

Total: \$4.24 B



Pre-Seed/Seed Plus Fund Capitalization Program



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Pre-Seed/Seed Plus Fund Capitalization Program Goals and Objectives

- Increase the number of professionally managed Pre-Seed Funds investing throughout Ohio
- Increase the amount of early-stage capital being invested in Ohio technology-based companies in the Imagining, Incubating, or Demonstrating phases of commercialization
- Create a risk capital climate that supports the development, retention, and attraction of investable technology companies in Ohio
- Accelerate the growth of high-potential technology companies in Ohio and create high-paying jobs in Ohio
- Build a pipeline of technology company deal flow that increasingly attracts the resources of venture capital firms both within and outside of Ohio

Current Pre-Seed/Seed-Plus Portfolio

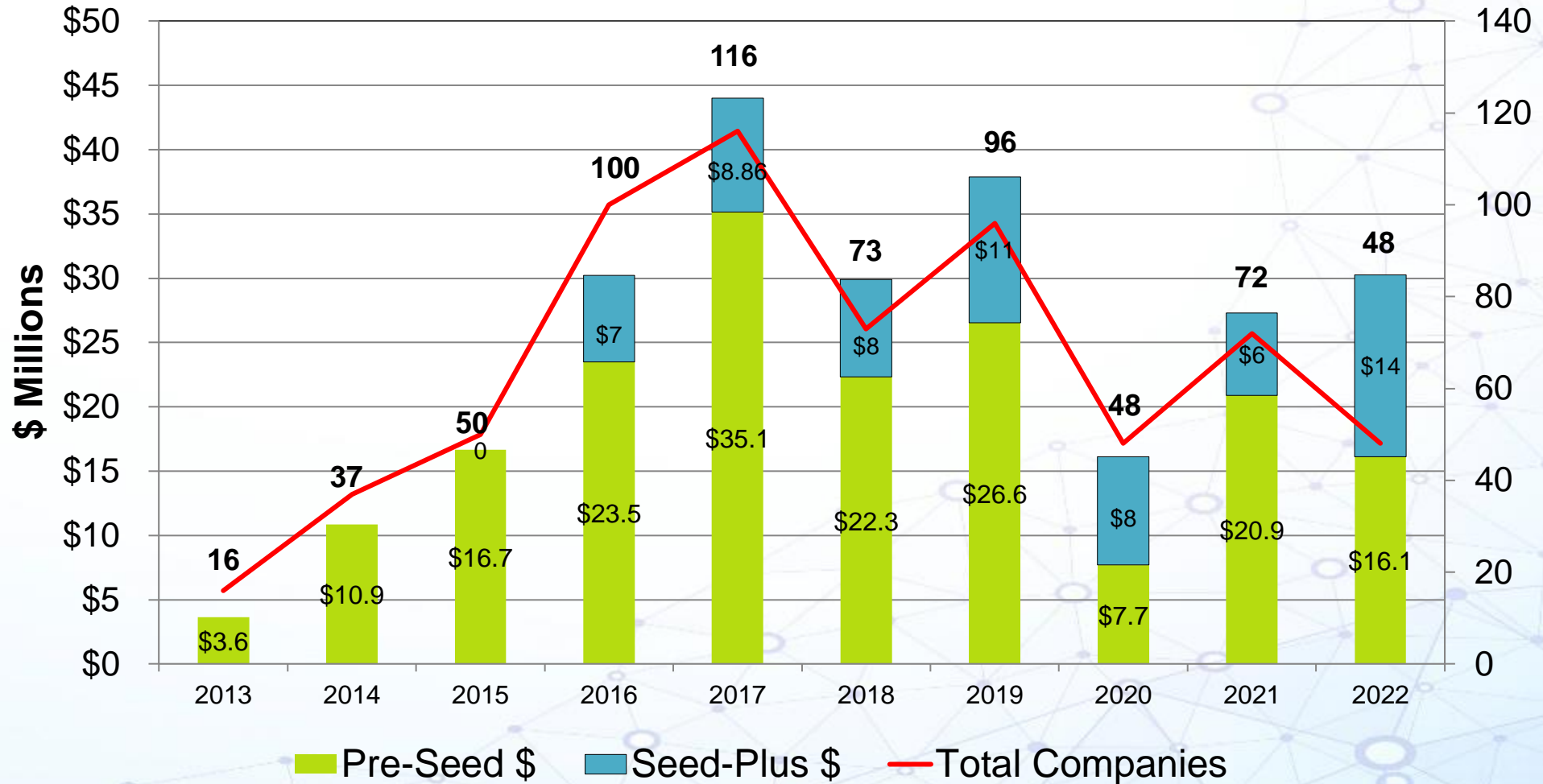
48 total funds awarded in 2013, '15, '16, and '21

- 15 have funds remaining
- 25 fully invested
- 6 declined
- 2 still to execute

\$ Millions	OTF + Match	OTF Only
Total Original Award	\$460	\$192
Total Invested	\$250	\$105
Total Dry Powder	\$147	\$60
Pre-Seed Dry Powder	\$92	\$46
Seed-Plus Dry Powder	\$55	\$14

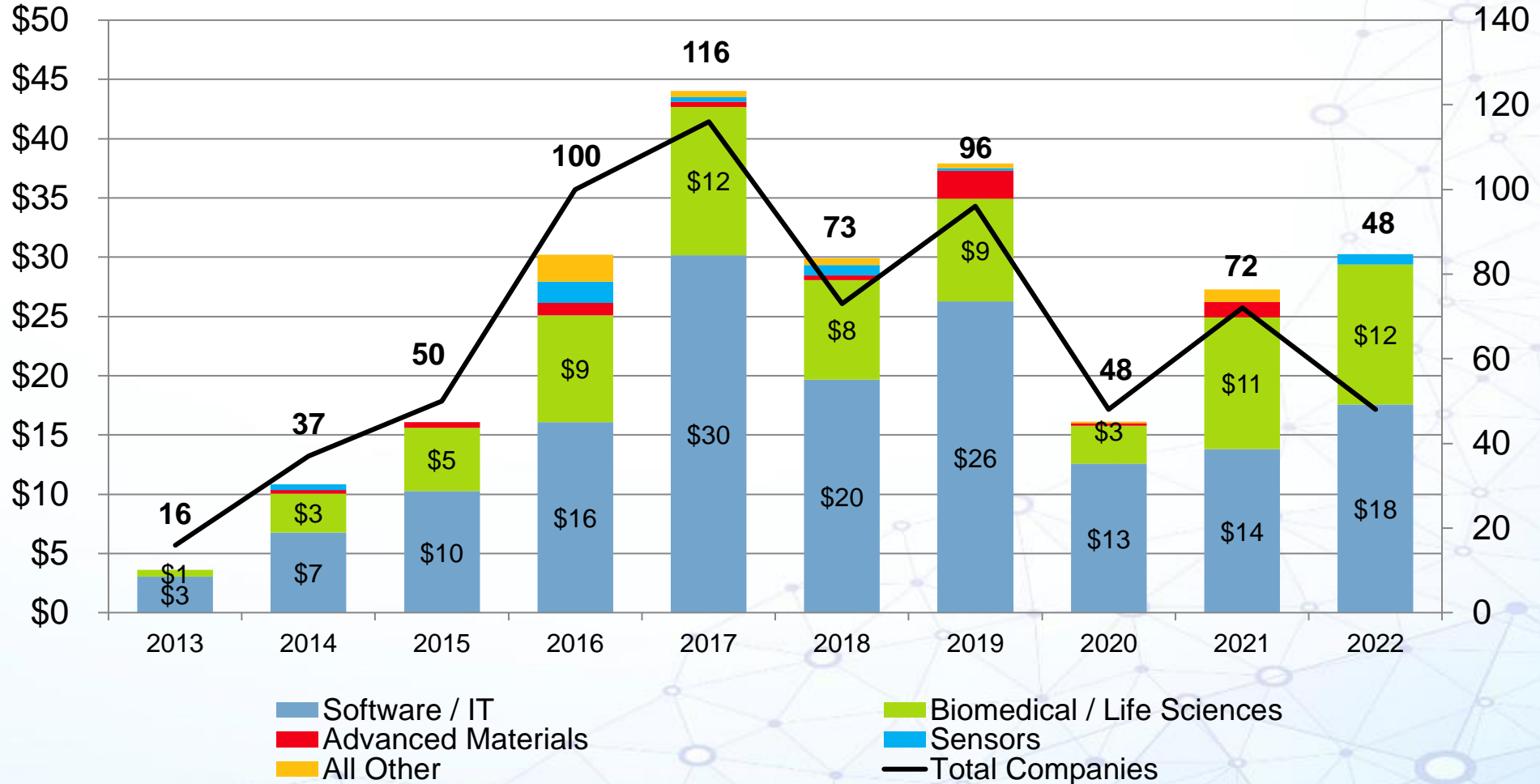
Total Fund Activity

Total # of deals/year has declined, while total investment/deal has increased



Total Investment by Tech Focus Area

Biomed / Life Sciences investments increasing; Software / IT decreasing; all other tech areas steady



ESP and Pre-Seed Fund Portfolio

- More than 1,000 companies have received assistance with roughly half receiving some Pre-Seed investment



Pre-Seed Invested Companies - EXITS

Convelo

Myonexus
THERAPEUTICS

AGILE NETWORKS
Connect Empower Transform



STIRLING
ULTRACOLD

OniShift

updox

33
Total
Companies

medpilot

\$37.7
M

Repaid to
Third Frontier

Supply Dynamics

wisr

CELENEX

Health Data Intelligence
Actionable Insights for Better Healthcare

Roadtrippers



jerseywatch

STANDARD BARIATRICS

nexosis

Ahalogy

T-Pro Solutions
Optimizing Promotion Return

Able Software

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Company Presentation Entrepreneurial Services Provider (ESP) Program

Entrepreneurs' Center
Scott Koorndyk, President



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The Entrepreneurs' Center Organizational Overview

18 OCTOBER 2022

DAYTON'S INNOVATION STRATEGY



**46%
GROWTH**

IN GREATER DOWNTOWN JOBS
(2017-2021)

Economic Assets:

Dayton's innovation strategy leverages college and university partners, Wright-Patterson AFB, defense industry, local hospital networks and care providers, and state and local government stakeholders



**280%
INCREASE**

**IN SBIR/STTR AWARDS TO
DOWNTOWN COMPANIES**
(2010-2014 v. 2015-2019)

Physical Assets:

Downtown's revitalization, growth in commercial corridors, improving walkability and mobility, and now the Hub at the Dayton Arcade provide the underlying infrastructure for innovation and creativity

Networking Assets:

Trust between innovation partners and alignment around Dayton's vision. A deepening network of entrepreneurship program providers and intentionality in engaging black and brown founders



**\$2.3B
INVESTMENT**

IN ONGOING OR PLANNED PROJECTS

(GREATER DOWNTOWN 2019-2022)

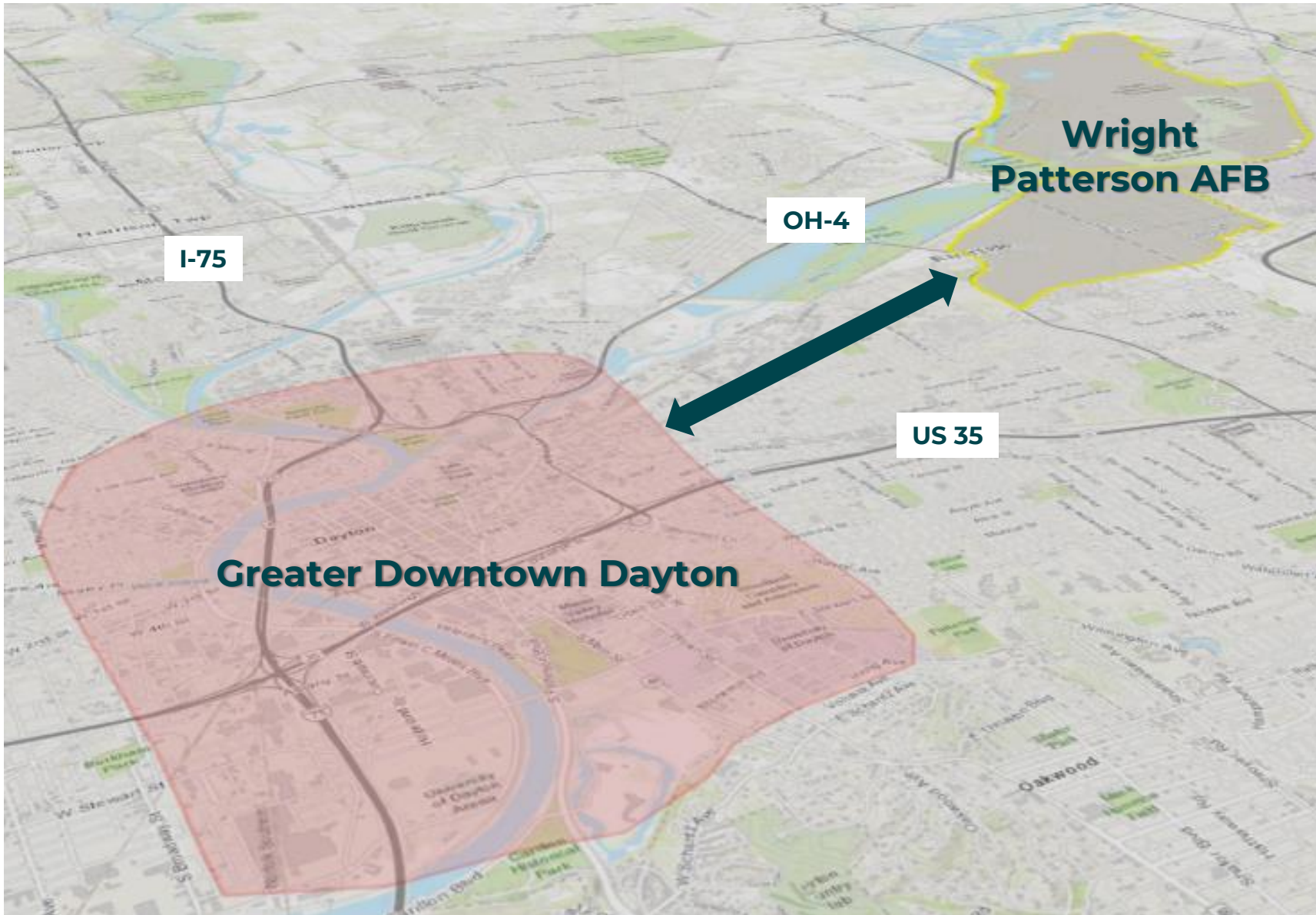


**200%
GROWTH**

IN ENTREPRENEURS' CENTER

PORTFOLIO (2019-2021)

Dayton's entrepreneurship-centric strategy is already underway, partnerships in place, leveraging assets, & working



Wright-Patterson AFB

- Direct Impact: 29,423 jobs & \$2.52B in payroll
- Indirect Impact: 50,784 jobs & \$2.82B in payroll
- \$5.63B in direct economic output / \$9.91B in indirect & induced impact
- 1,500+ patents available for license

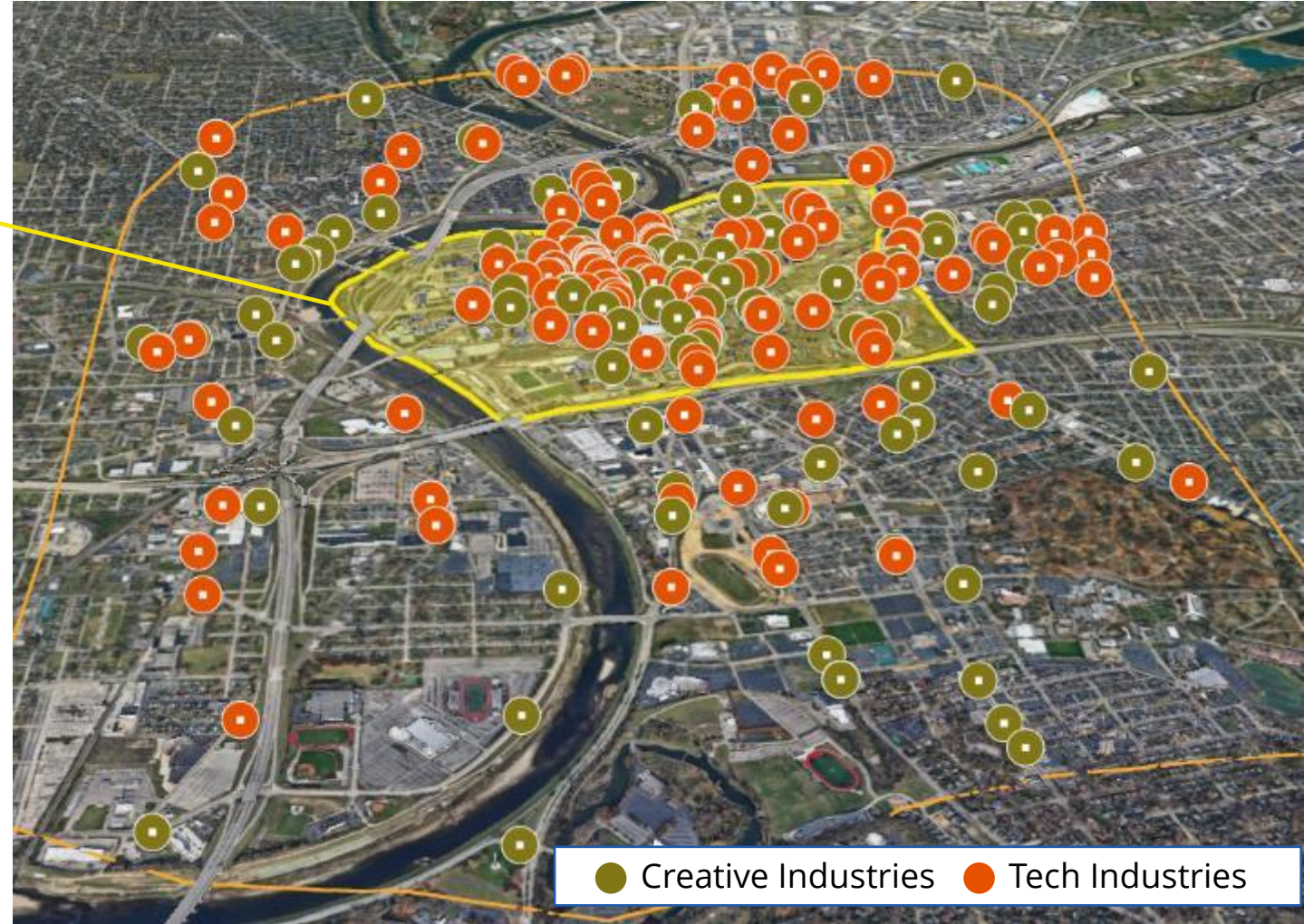
(Source: Dayton Development Coalition)

Greater Downtown Dayton

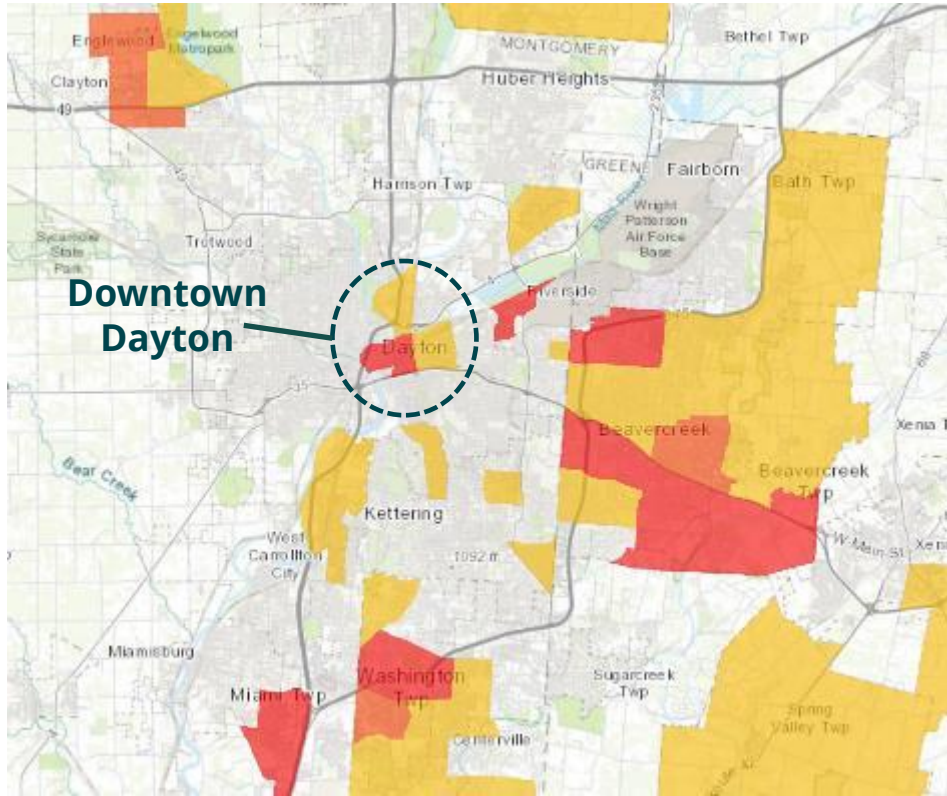
- 64,451 jobs
- \$9.7B in total business revenues

(Source: Dayton Business Demographics Analysis - Wright State University)

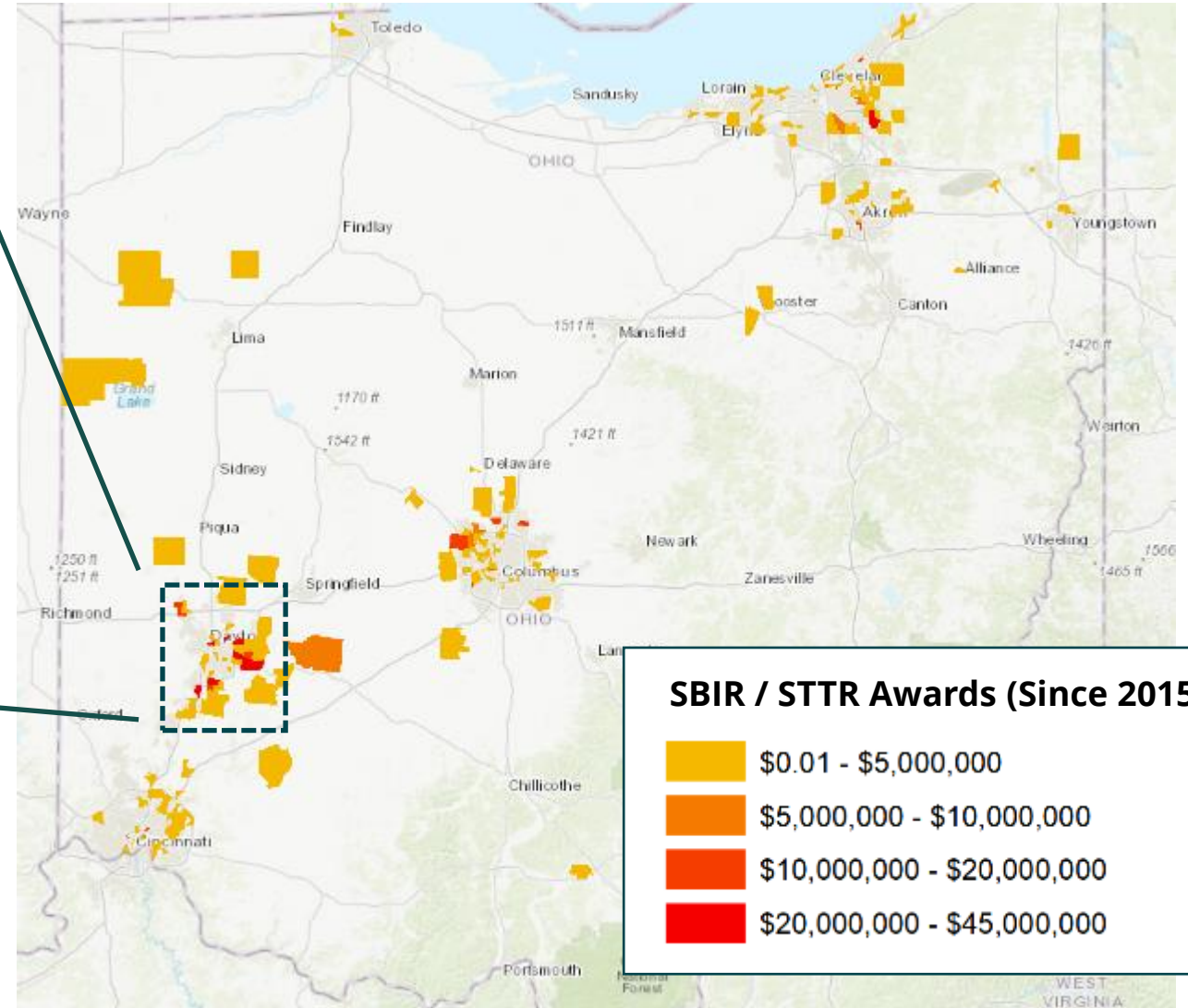
- **Technology and creative industries** are most concentrated in the heart of downtown and within blocks of the Arcade
- Fundamental linkage between the talent necessary to drive these endeavors and the place-based qualities



SOURCE: Technology and Creative Industries from ReferenceUSA



SOURCE: <https://www.sbir.gov/sbirsearch/award/all>



SBIR / STTR Awards (Since 2015)

- \$0.01 - \$5,000,000
- \$5,000,000 - \$10,000,000
- \$10,000,000 - \$20,000,000
- \$20,000,000 - \$45,000,000

Geography	# Awards Since 2015	Total \$ Awarded	% of Ohio Total
Ohio	1,464	\$671M	N/A
Dayton MSA	673	\$308M	46%
Downtown Dayton	75	\$34M	5.1%

Almost half of 2015-2021 SBIR / STTR awards in Ohio to entities in the Dayton Region

Overview of the EC

- 501(c)3 founded in 2000
- Evolved to a full-service Innovation Support Center
 - Regional Small Business Development Center
 - Comprehensive Incubation / Acceleration Programs
 - Growing collection of Funding Resources
- Undergoing rapid organizational expansion:
 - 24 FTE – 150% YOY growth since 2015
 - Largest (by revenue) economic development organization in the Dayton Region
- Gateway to resources of the Regional entrepreneurial ecosystem

Primary Capabilities

Business Advice
Business Services
Network Development
Mentoring
Access to Capital

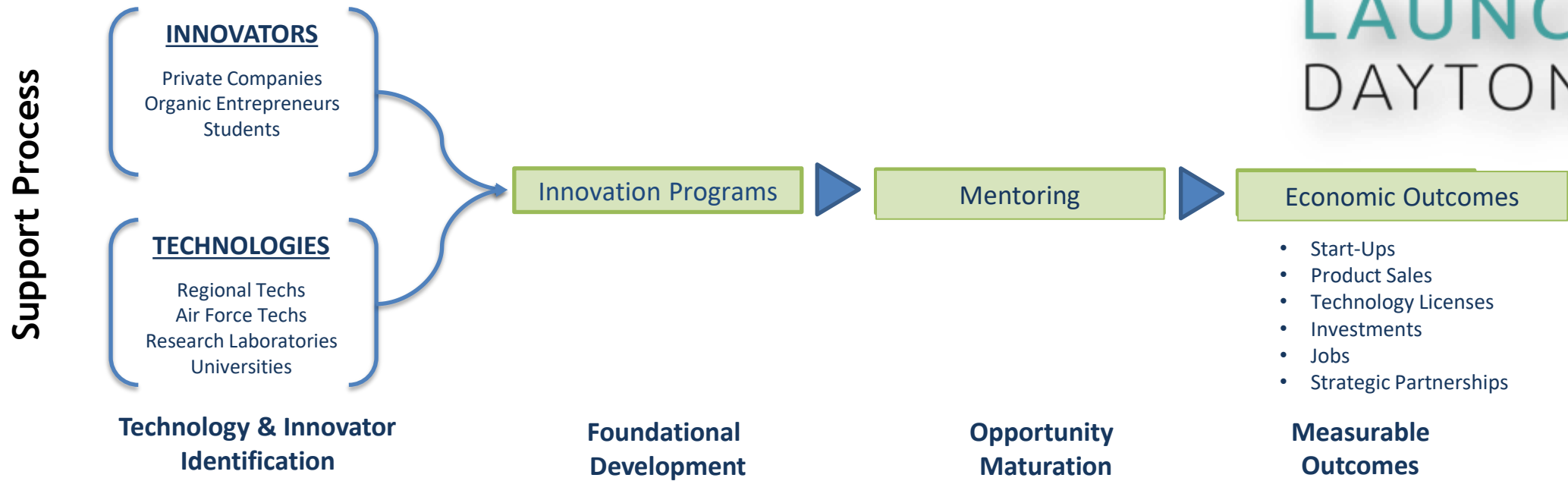
Secondary Capabilities

Licensing / JV Support
Financial Planning
Marketing / Market Planning
IP Strategy / Planning
Leadership Recruiting / Development

- Leads commercialization programs with DoD, academic and corporate partners across the US



- The EC is a founding partner of the Launch Dayton initiative that synchronizes the resources of more than 20 regional partners to catalyze small businesses growth



Partners



The EC's Impact on Entrepreneurs



1,100 companies in the EC portfolio

- 100 ESP Clients
- 200+ Active Air Force Small Business Clients
- 800 Small Business Development Center Clients



Arcade Innovation Hub

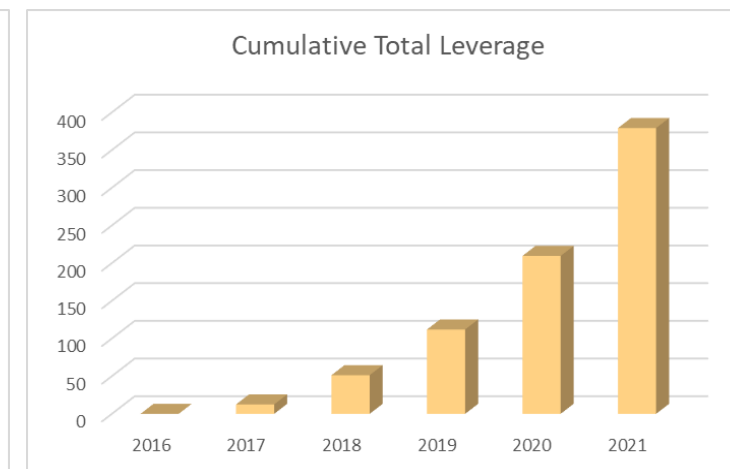
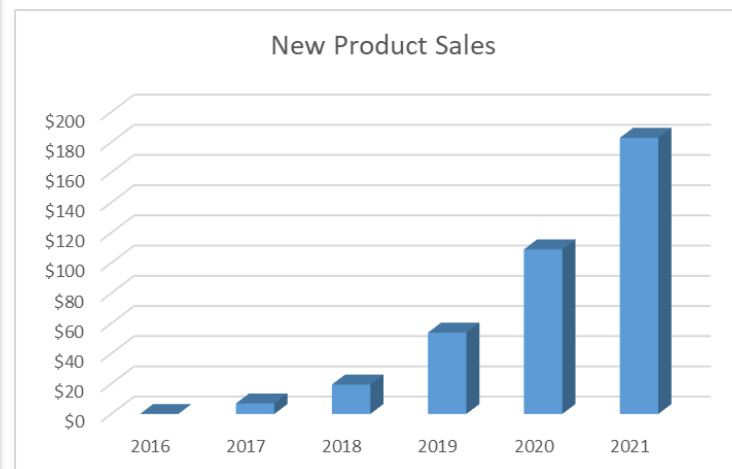
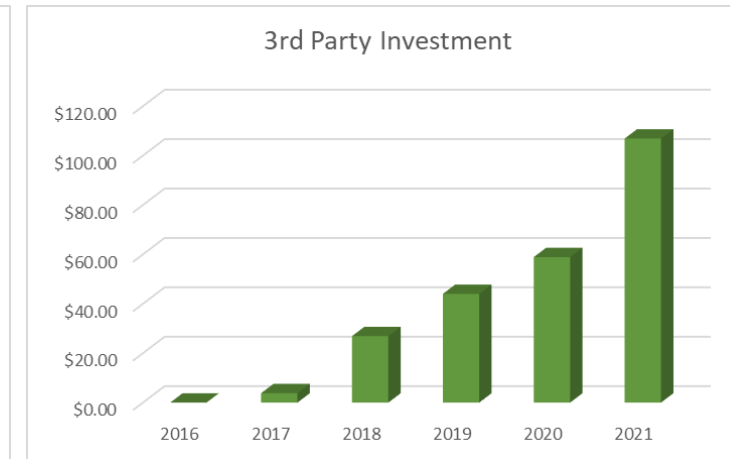
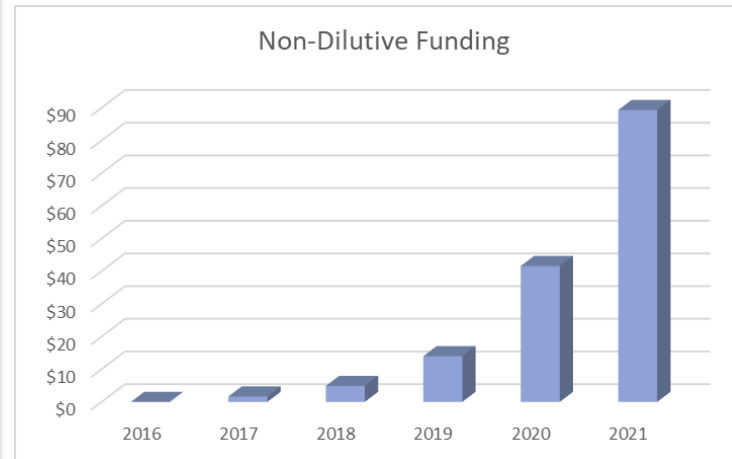
- 80 Private Offices - FULL
- 130 Resident Companies
- 575 Small Business Members
- 400+ Student Members
- 40 academic classes / week



Air Force Program Impact

- 450 participating companies
- \$320M in follow-on capital

ESP Metrics



THANK YOU!

Company Presentation Technology Validation and Start-up Fund (TVSF) Program

Battle Sight Technologies
Nick Ripplinger



TVSF

CrayTac and ColdFIRE

BATTLE★SIGHT
TECHNOLOGIES

Background

- Battle Sight is a leading rapid product commercialization firm focused on dual use technologies that support combat, first responder, emergency management, and commercial personnel.
- Battle Sight has significant experience with development and commercialization of products and technologies that focus on making the warfighter's mission simpler, safer and more lethal.

CrayTac – TVSF Phase 2

- Battle Sight was awarded a Phase 2 TVSF award in 2018 for CrayTac IR.
- CrayTac IR is a writing appliance/tactical crayon designed to ensure effective communication in no-light/low-light conditions.
- TVSF provided the funding to conduct -
 - Prototype Production
 - Field Testing
 - Data Analysis
 - Scale up Manufacturing
 - Purchase Equipment
 - Production
- CrayTac is now a fully commercialized product. Battle Sight has also gone on to produce and demonstrate a visible spectrum tactical crayon designed to ensure effective communication in no-light/low-light conditions without the use of night vision goggles. Modifications to the design and chemistry elements of the commercialized CrayTac IR were met to create the visible spectrum version for the warfighter and first responders.



CrayTac IR



Visible CrayTac

ColdFIRE – TVSF Phase 2

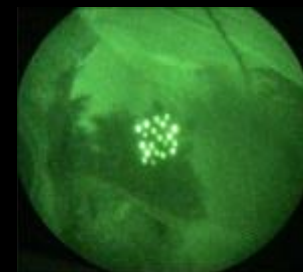
- Battle Sight was awarded a Phase 2 TVSF award in 2021 for ColdFIRE.
- ColdFIRE is a photoluminescent infrared ceramic powder incorporated into various form factors to provide covert signaling capabilities for location and rescue of isolated personnel and friend/foe identification.
- TVSF has provided the funding to conduct -
 - Prototype Production
 - Field Testing
 - Data Analysis
 - Scale up Manufacturing
 - Purchase Equipment
 - Production
- Battle Sight is currently working on the production of the ColdFIRE powder to incorporate into commercial films, tapes, epoxies, backing materials, plastic injection molded materials such as bands, patches, etc.



ColdFIRE patch ambient light & night vision

Battle Sight's Suite of Products

- NightFall IR - A chemiluminescent infrared signaling target for location and extraction of isolated personnel on land and at sea.



NightFall IR

- MWIR Rescue Beacon – A quantum cascade laser that provides positive identification of US or partner forces in an open ocean environment as well as on land.



*MWIR
Rescue
Beacon*

- Falling Saber - An infrared beacon incorporating proprietary locational barometric data to assist airdrop accuracy and location of airdropped assets and personnel.



Falling Saber

Contact Info

Battle Sight Corporate Phone and Email –

- 937-260-4431
- Sales@BattleSightTech.com

Nick Ripplinger Phone and Email –

- 937-238-7155
- Nick@BattleSightTech.com

Company Presentation Pre-Seed Fund

Accelerant Fund I

Accelerant Fund I

Started in 2015

- Fund Type: Pre-Seed/Seed
- Third Frontier Technology Focus Areas:
 - Healthcare and Biomedical
 - IT & Data Management
 - Advanced Materials and Manufacturing
 - Aerospace and Defense
- Fund Size:
 - Partner Contribution: \$6.045M
 - Ohio Third Frontier Loan: \$3.00M
- Investments: \$7.568M
- Sidecar Investments: \$5M+

23 Partners

- Began raising fund in 2014
- Institutional Investors:
 - Healthcare Providers/Insurers: 3
 - Universities: 3
 - Community Organizations: 2
 - Venture Capital Funds: 2
 - Local Companies: 2
- Family Partnerships, Individuals, and Trusts: 11

8-Member Advisory Board

Investments

- **Advanced Materials: 2**
- **Biomedical: 6**
- **Sensors: 2**
- **Software: 7**



Company Presentation

Pre-Seed Fund portfolio company

Xerion Advanced Battery Corp
John Busbee – CEO, Co-Founder



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XERION

ADVANCED BATTERY CORP

*OHIO THIRD FRONTIER COMMISSION
October 18, 2022*

*JOHN BUSBEE, PH.D.
CEO, CO-FOUNDER*

FOUNDED IN 2010 as a Delaware C-Corp

HEADQUARTERED IN KETTERING OHIO

STRONG TECHNICAL TEAM

46 Employees, 15 Ph.D.'s

**PLATFORM TECHNOLOGY -- LARGE
MARKET OPPORTUNITIES**

STRONG IP POSITION

10 patents issued or pending

AUTOMATED PILOT SCALE-2022

COMMERCIAL MANUFACTURING-2024

\$50+ Million Funds to Date



FACTS AT A GLANCE

CURRENT FOCUS

*Sustainable Manufacturer of Lower
Cost, High Energy, Fast Charge, Li-
ion Batteries*

Value Proposition

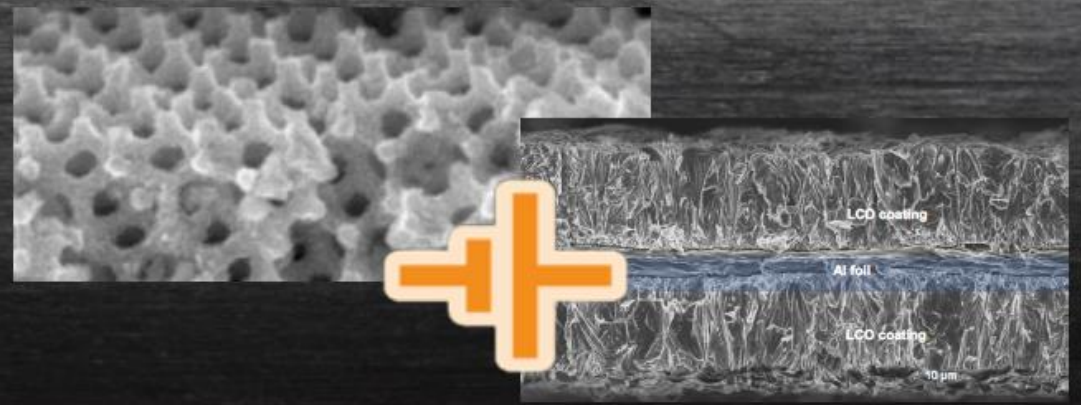
Xerion Advanced Battery Corporation has developed and piloted a disruptive, step-change technology platform for lithium-ion batteries, and is raising capital for large-scale, commercial production

- Planned 4 GWH facility in Dayton represents the first full-scale production of a **fundamentally new process** of manufacturing, lithium-ion batteries. The company's patented **DirectPlate™** and **StructurePore™** technologies together provide **sustainable competitive advantages** in the Li-ion battery market.
- **Significantly reduces cost** by reducing the number of chemical processes required for end-to-end battery production
- **Improved performance** across key attributes: energy density (40% increase), charge time (10 minutes to 80% recharge), cycle life (1,200 cycles)
- **Enables** critical domestic raw material resource usage—avoiding Chinese refinement stranglehold on battery metals
 - Reduces energy consumption by 75% and carbon emissions by 40%
 - Enables streamlined, low-cost **recycling** of used batteries.
- **Established strategic commercial relationships** with several market leading partners

Our batteries have broad appeal in a wide variety of applications including electric vehicles, grid-scale storage, consumer electronics, power tools, drones, medical devices, and military applications



Our Technology



Xerion has developed two novel patented technologies for use in the production of advanced rechargeable batteries:

1) DirectPlate™, a manufacturing process

DirectPlate™ results in a battery manufacturing process that lowers manufacturing cost 50%, mitigates carbon emissions at least 40%, and is readily applicable to battery recycling

2) StructurePore™, a nano-structured electrode architecture

The StructurePore™ architecture allows high power, fast charge, and high cycle life without sacrificing energy density

Together these technologies produce a battery that lasts longer, charges faster, and is much more stable and safer than other Li-ion batteries.

Our Customer Focus

Electric Vehicles (EVs)

Working with several EV manufacturers



Defense

*Negotiating contracts for
Army, Navy, Special Ops and
Intelligence Agencies*

Consumer Electronics

*Joint R&D agreements with
three market leaders*

Battery Components

*Joint R&D agreement with
market leader*

POTENTIAL
CUSTOMERS
IN THE
PIPELINE



Volkswagen

Negotiating JDA



SAMSUNG SDI

Due Diligence, Testing and
offered investment
(Automotive & Electronics)



Discussing JV



INNOVATOR IN ELECTRONICS

JDA



CR&D Contract
(Battery Packs for
Soldiers)



R&D Contract (Evs)



Draft Supply
Agreement



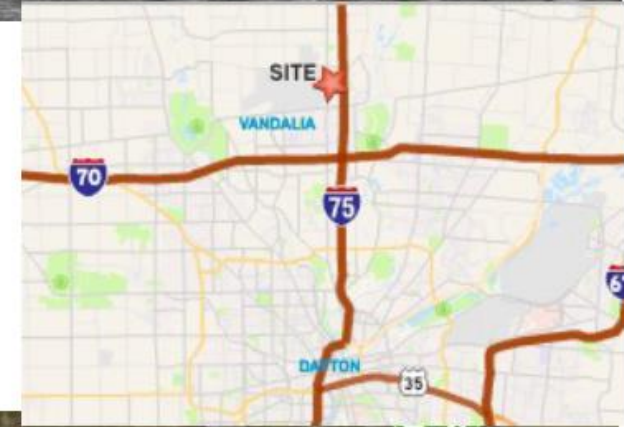
Executive site visit
awaiting prototypes



JDA(Prototypes for
electronics)

Chronology of Economic Development Support

- 2016 *Ohio Third Frontier Target Industry Attraction Program - \$490K*
- 2017 *Montgomery County ED/GE Grant Program - \$150K*
- 2018 *Accelerant Fund I - \$200K Series A-1 Preferred (plus \$200K in sidecar investments)*
- 2020 *JobsOhio Innovation Fund - \$2M Series B bridge round
Montgomery County ED/GE Grant Program - \$450K*
- 2022 *JobsOhio Growth Equity Fund - \$500K Series B bridge round*



- 680,000 Sq. Ft (~25,000 sq. m)
- 60,000 Sq. Ft (plating facility)
- 130,000 Sq.ft (assembly facility)
- 60,000 Sq ft. (Office and R&D)
- 80+ Acres w/ dedicated sub-station
- 100% Air Conditioned

DAYTON, OH COMMERCIAL PLANT

(Building Purchased)





DAYTON

- 1 (Expandable to 4) GWh Capacity
- Markets Served: Consumer Electronics, Defense, Drones, Power Tools, Microbatteries
- Model Plant

SOUTHERN US

- 4 (Expandable to 10) GWh Capacity
- Markets Served: Automotive, Grid-Scale Storage, UPS

WESTERN AUSTRALIA (WA) JV w/conglomerate—Draft Term Sheet


- 30 GWh Capacity
- Markets Served: Automotive, Electronics, Grid-Scale
- Estimated \$3B annual earnings to Xerion

EUROPE (JV under discussion with government of Finland)

- 15 GWh Capacity
- Markets Served: Automotive, Electronics, Grid-Scale

GO TO
MARKET
PLAN

2022 Ohio Ethics Law Training

A background graphic consisting of a network of interconnected nodes and lines, forming a grid-like structure that tapers towards the top right. The nodes are represented by small circles, some of which are highlighted in a light blue color. The lines are thin and light blue, creating a complex web of connections.

Next Meeting

January 17, 2023

Other Business / Adjournment