Ohio Third Frontier Commission Meeting

September 14, 2017

Ohio | Development Services Agency

Ohio | Third Frontier
Innovation Creating Opportunity

Technology Validation & Start-up Fund Program

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Technology Validation & Start-up Fund Program

Lead Applicants/Phases

- Phase 1: Track A – Technologies developed at Ohio research institutions needing additional validation/proof before an Ohio start-up company will license. Up to $50,000 with 1:1 cash cost share.

- Phase 1: Track B – Ohio research institutions with sufficient internal deal flow to support a multitude of Phase 1:Track A type projects. Awards from $200,000-$500,000 with 1:1 cash cost share.

- Phase 2 – Ohio start-ups and young companies that are a prospective licensee of a technology from an Ohio institution. Up to $100,000 (or $150,000 if in MedTech) as initial capitalization with no cost share.

External Evaluator: Quantum Commerce

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Technology Validation & Start-up Fund Program

14th Cycle of the TVSF program. To date, including this cycle:

	Proposals	Awards
Phase 1: Track A	232	93
Phase 1: Track B	9	9
Phase 2	181	68

Current cycle

- 15 proposals with 4 recommended for award
- 2 proposals are re-submits, both of which are recommended

Phase 1 Progress

To date, 76 Phase 1 complete.

$3,732,800 Awarded → **$2,992,929 Spent**

59 Not Yet Licensed

11 of which have progressed to Phase 2 ← **14** Licensed To Startup

3 Licensed To Non-Startup
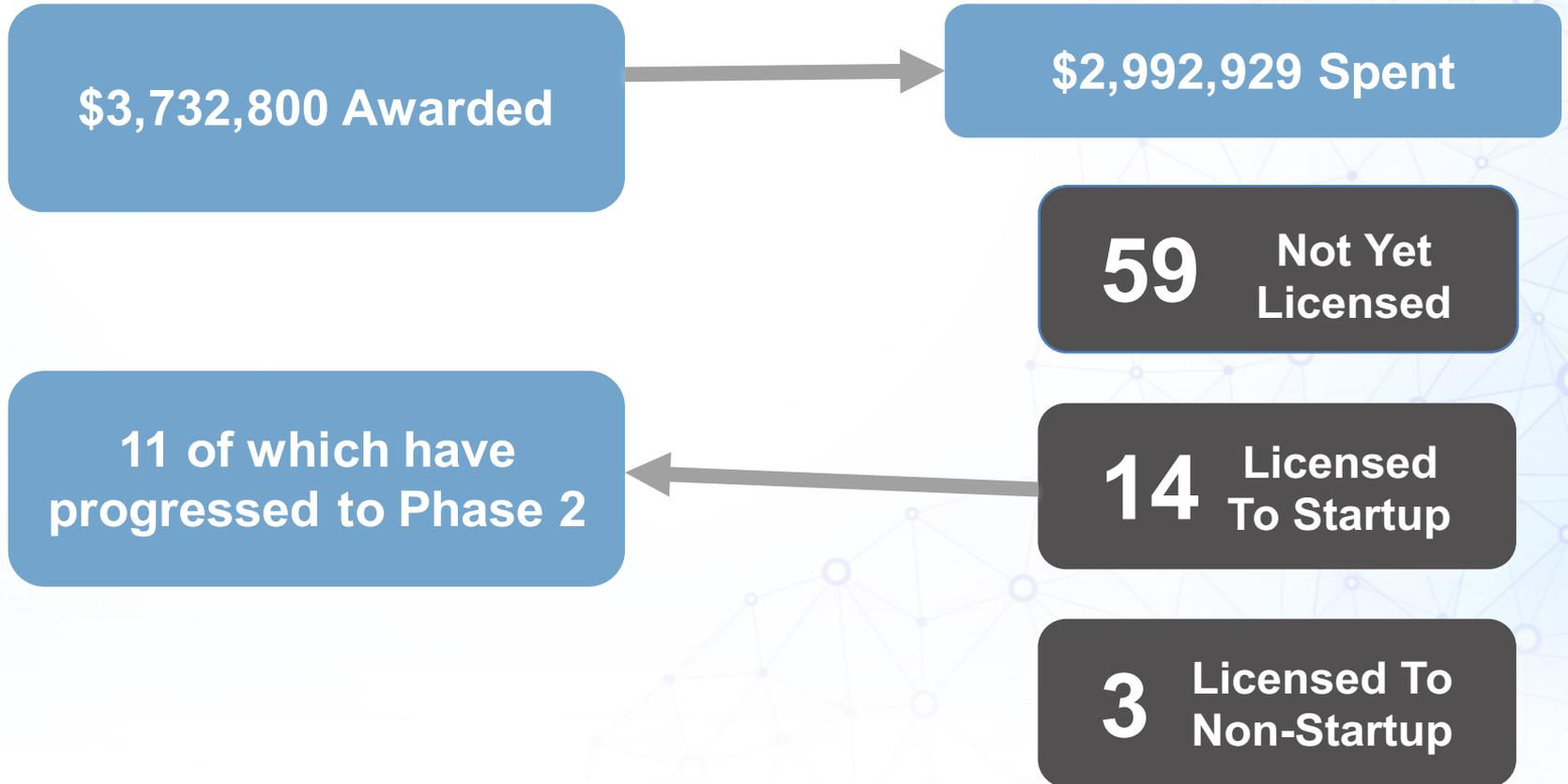
Phase 2 Progress

To date, 43 Phase 2 complete.

$4,433,366 Awarded → $4,118,658 Spent

25 received equity investments totaling $24.2M

- **7** Market Entry
- **10** Pre-Market Entry
- **24** Trials/R&D
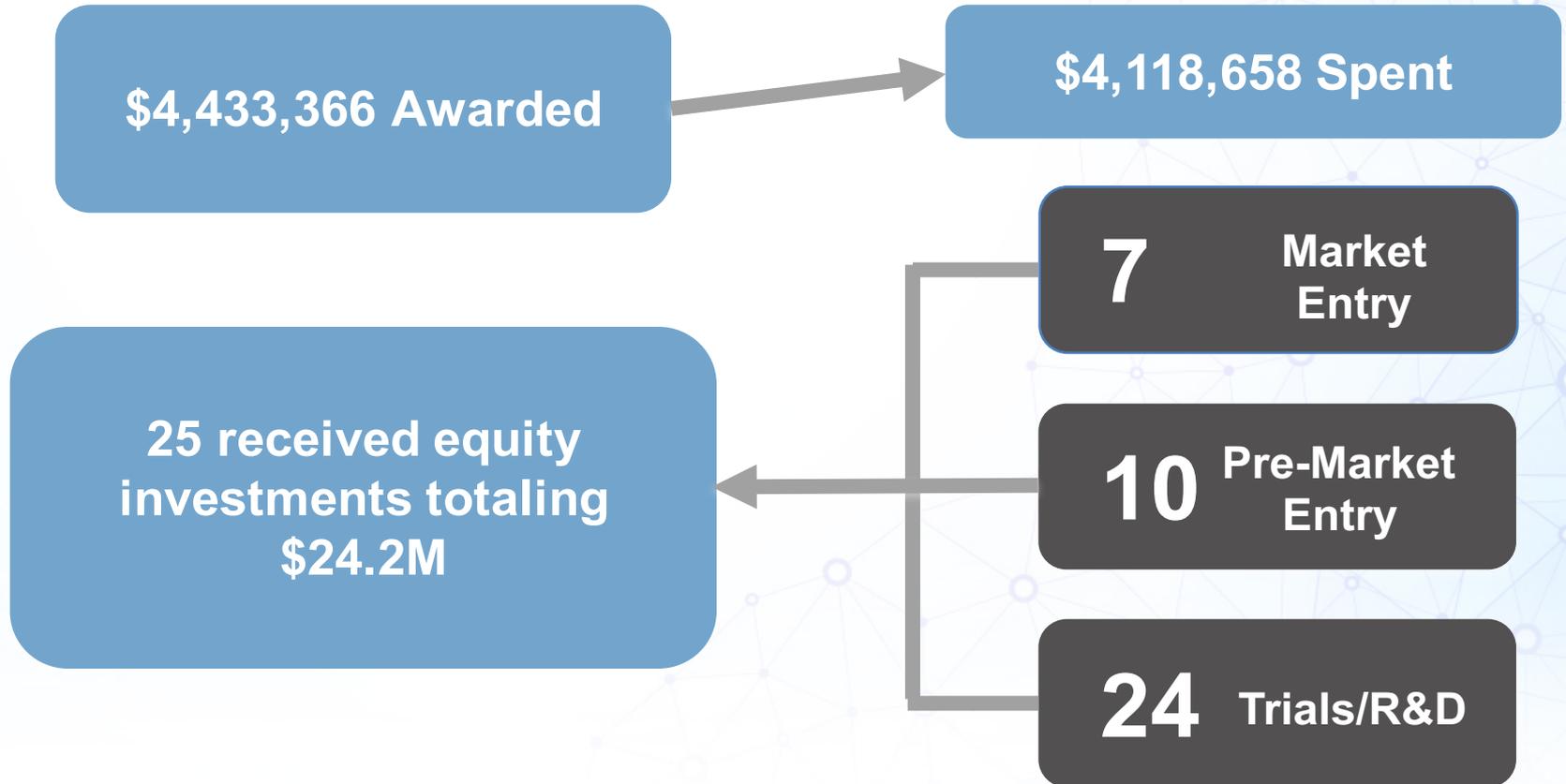
Overall Metrics

Across the entire program: 148 Projects Reporting

170
Total Jobs Created

$58.4M
Total Leverage

134
For Profit Jobs Created

$4.5M
Product Sales

$14.9M
Federal Grants

$9.7M
Other

$29.3M
Follow On Equity

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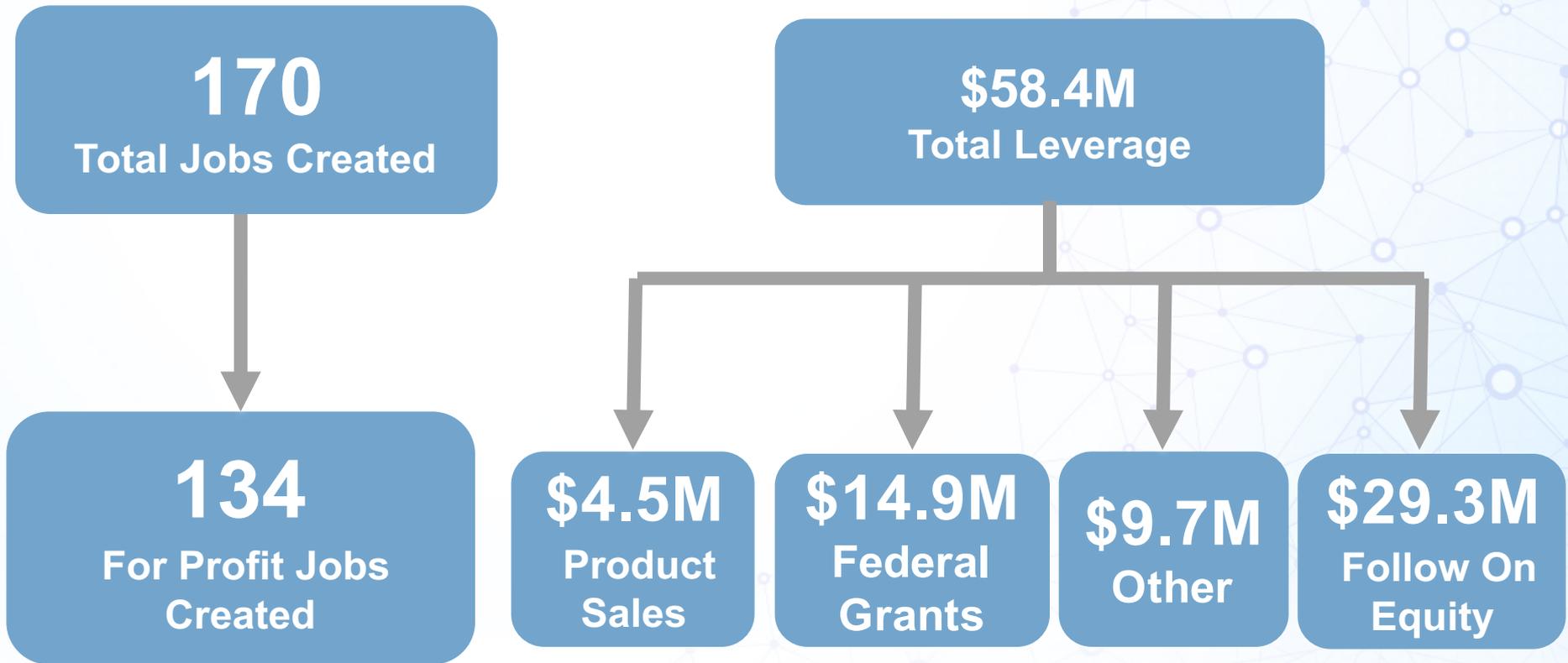
OTF TVSF – ROUND 14 EVALUATOR REPORT

14 SEP 2017

OVERVIEW – ROUND 14

- 4 of 15* proposals submitted this round are recommended for approval.
- Total grant dollars recommended is $498,832.

Round	Approval Rate	$$ Recommended
1 (APR 2012)	35%	$950,000
2 (AUG 2012)	52%	$900,000
3 (DEC 2012)	44%	$610,000
4 (JUN 2013)	30%	$864,000
5 (FEB 2014)	46%	$1,462,000
6 (JUN 2014)	39%	$998,000
7 (OCT 2014)	57%	$1,100,000
8 (FEB 2015)	37%	$710,000
9 (JUN 2015)	31%	$550,000
10 (DEC 2015)	38%	$925,000
11 (APR 2016)	46%	$1,239,000
12 (OCT 2016)	46%	$3,537,269
13 (MAR 2017)	38%	$1,567,500
14 (SEP 2017)	27%	$498,832
Overall	40%	$15,911,601
Average		$1,136,543

Note: One proposal withdrawn; total originally submitted = 16 Phase 2.

Quantum Commerce, LLC

ROUND 14 RESULTS - APPLICATIONS BY INSTITUTION
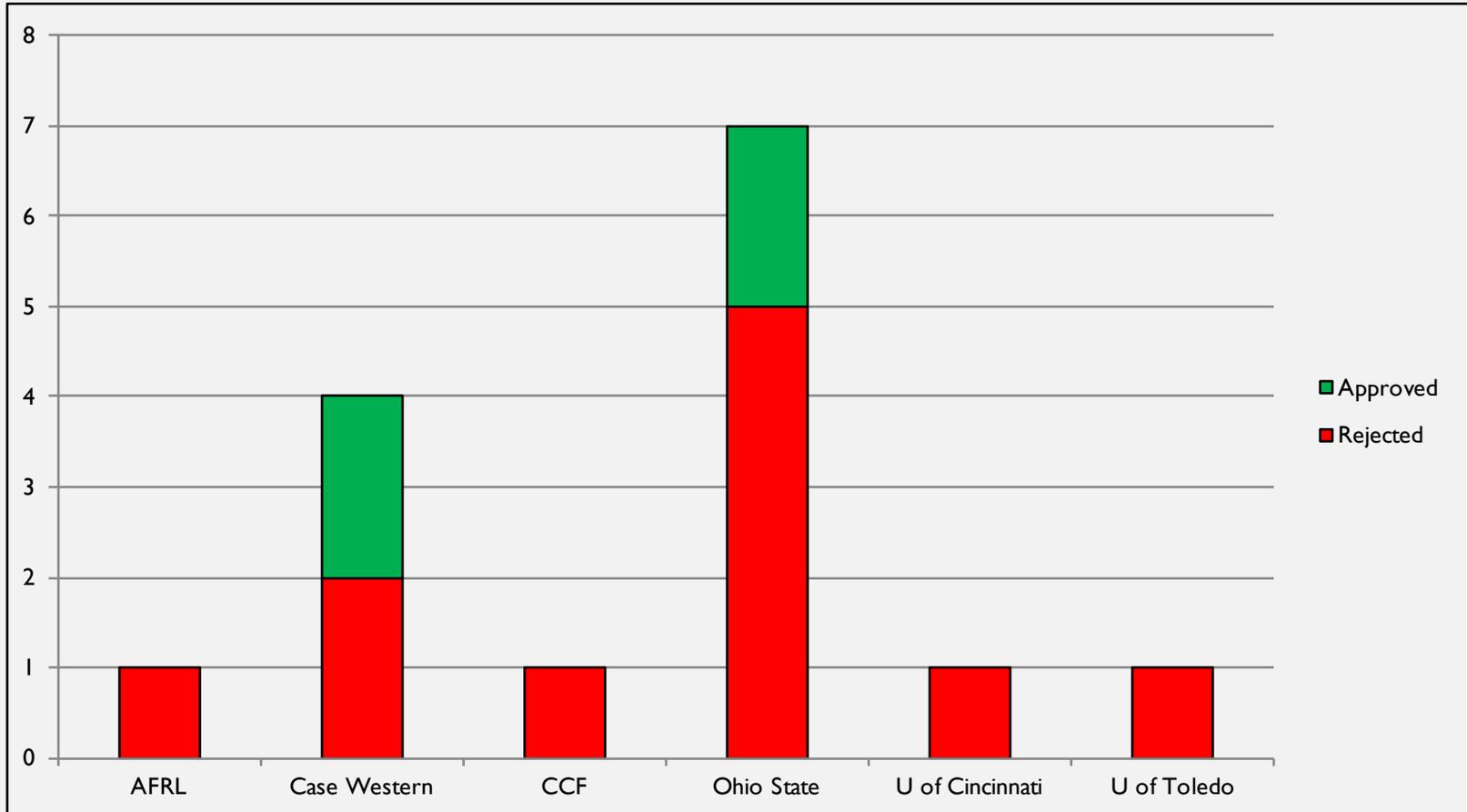
Phase 2 Category Ratings
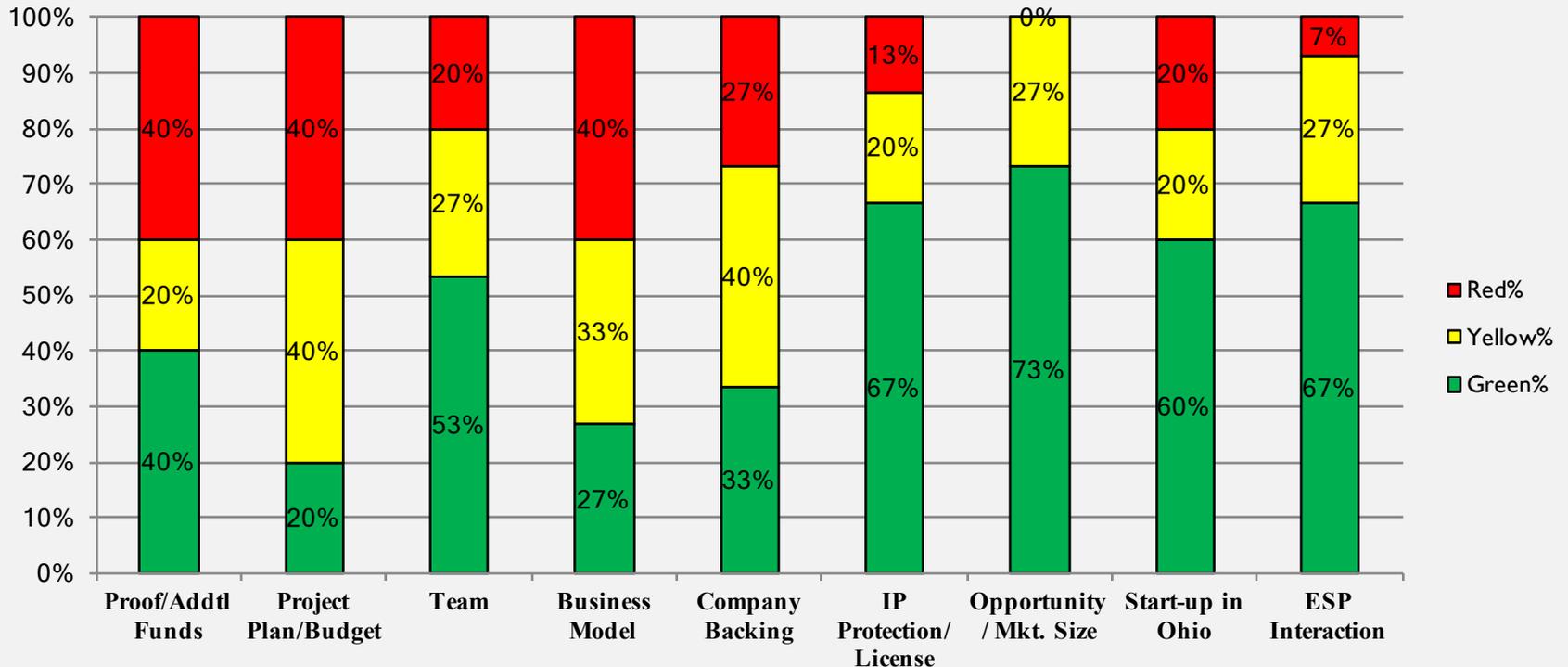
Quantum Commerce, LLC

PHASE 2 PROPOSALS RECOMMENDED FOR FUNDING

Round 14

PROPOSAL #	Licensing Institution	Lead Applicant	PROJECT TITLE	State Funds Requested	Total Project Budget	Recommended	Capital Raised to Date	Time to Market	Additional Capital to Market
18-0221	The Ohio State University	Innovate IP, Inc.	Innovate IP - Full Featured SaaS Implementation	$98,832	$98,832	$98,832	$25,000	6 mo	$600,000
18-0224	The Ohio State University	Noxsano Inc.	Powered Wound Care Bandage	$150,000	$150,000	$150,000	$85,000	2 yr	$2.25MM
18-0232	Case Western Reserve University	Dyad Medical Inc.	Software for Stent Analysis and Visualization Using Intravascular Optical Coherence Tomography (IVOCT)	$150,000	$150,000	$150,000	$250,000	2 yr	$4.45MM
18-0233	Case Western Reserve University	Wave# LLC	FastRAM, Hyperspectral Raman Imaging System for Advanced Materials	$100,000	$100,000	$100,000	$5,000	1 yr	$0

Quantum Commerce, LLC

Round 14

▪ Resubmission

- *Phase 2*
  - Two of fifteen (13%) Phase 2 proposals are resubmissions.
  - Both (100%) are Recommended for Funding.

▪ Carry Through

- *Two of fifteen (13%) Phase 2 proposals were previous Phase 1 awardees.*
  - One of those two (50%) is Recommended for Funding in this round.

Quantum Commerce, LLC

TRENDS -COMPARATIVE RESULTS (ALL ROUNDS TO DATE)

Rounds 1 – 14 Results

Phase 2 Applications
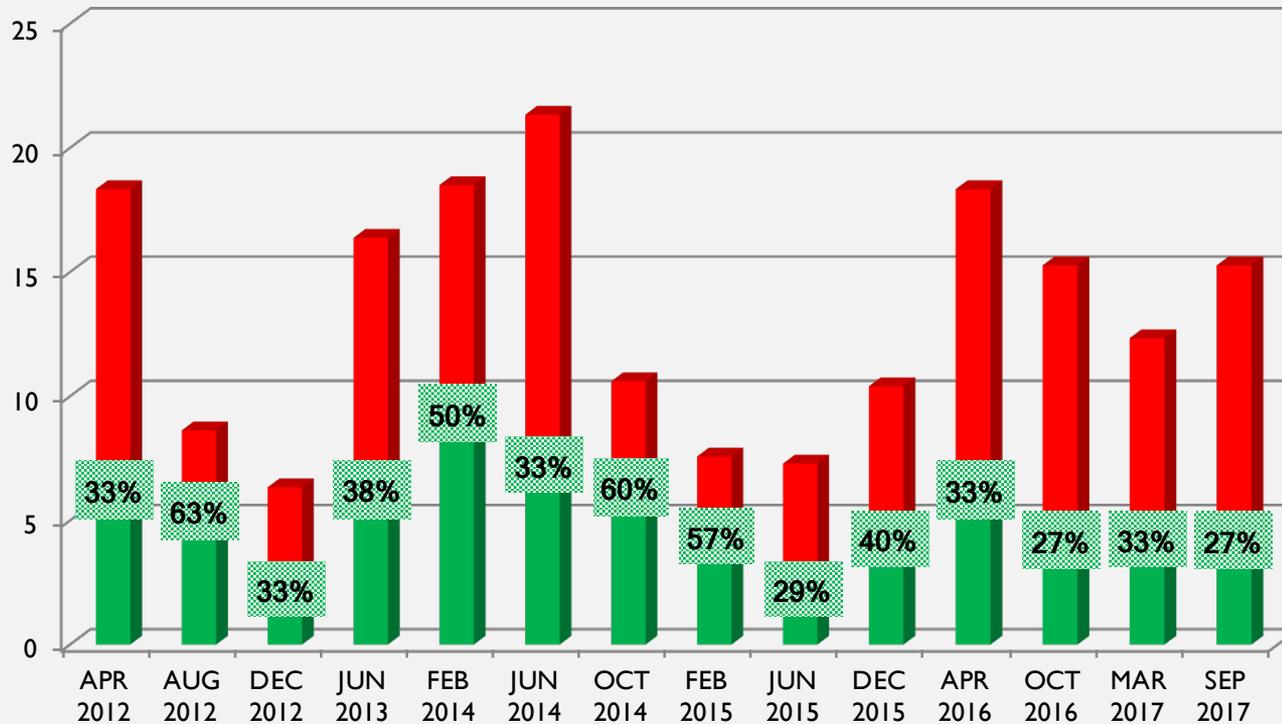
38% Cumulative Approval

Phase 2 Approved/Rejected by Institution

Quantum Commerce, LLC
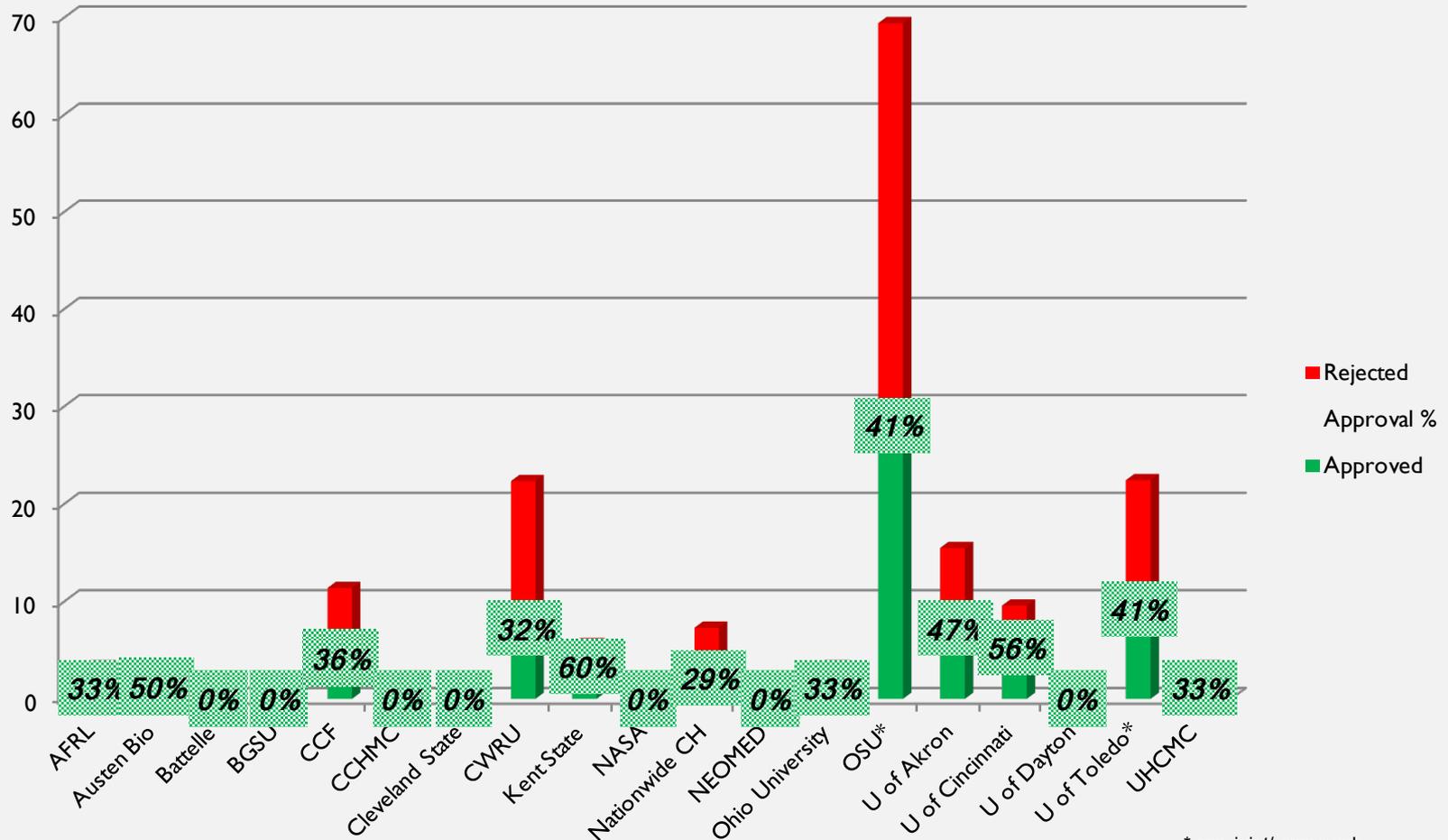
* one joint/ approved

Ohio Third Frontier Retreat
September 14, 2017

Meeting Objectives

Ohio's Growing Entrepreneurial Ecosystem

Ohio Third Frontier Commission — Entrepreneurial Services Provider Program

Ohio Third Frontier Commission

Entrepreneurial Services Provider Program

Map labels: Toledo, Cleveland, Youngstown, Akron, Mansfield, Columbus, Dayton, Cincinnati, Athens

Legend
- ● Entrepreneurial Services Provider Program (ESP)
- ○ ESP Collaborator

Key
- — Interstate Highway
- City or Village

R090717A

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Ohio Third Frontier Commission

Entrepreneurial Services Provider Program
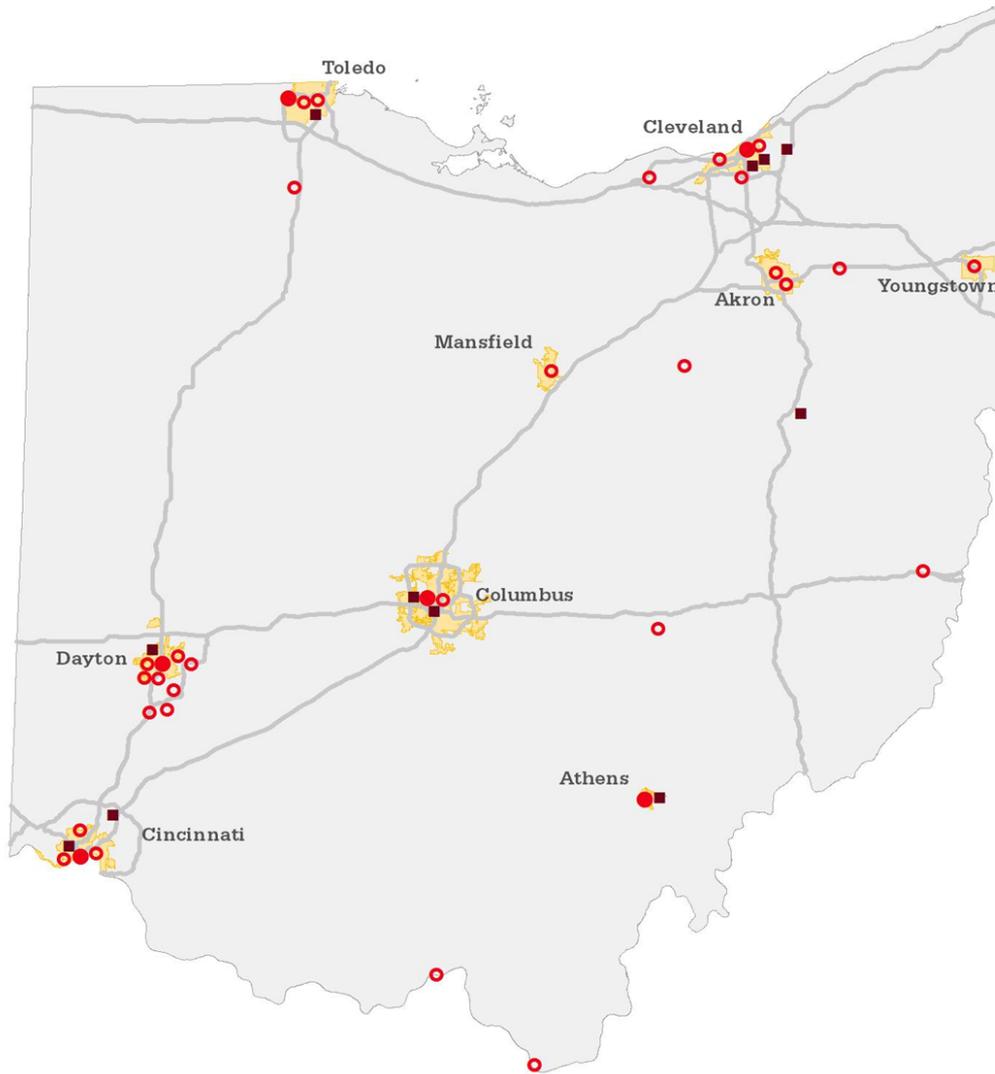
Ohio Third Frontier Commission

Entrepreneurial Services Provider Program
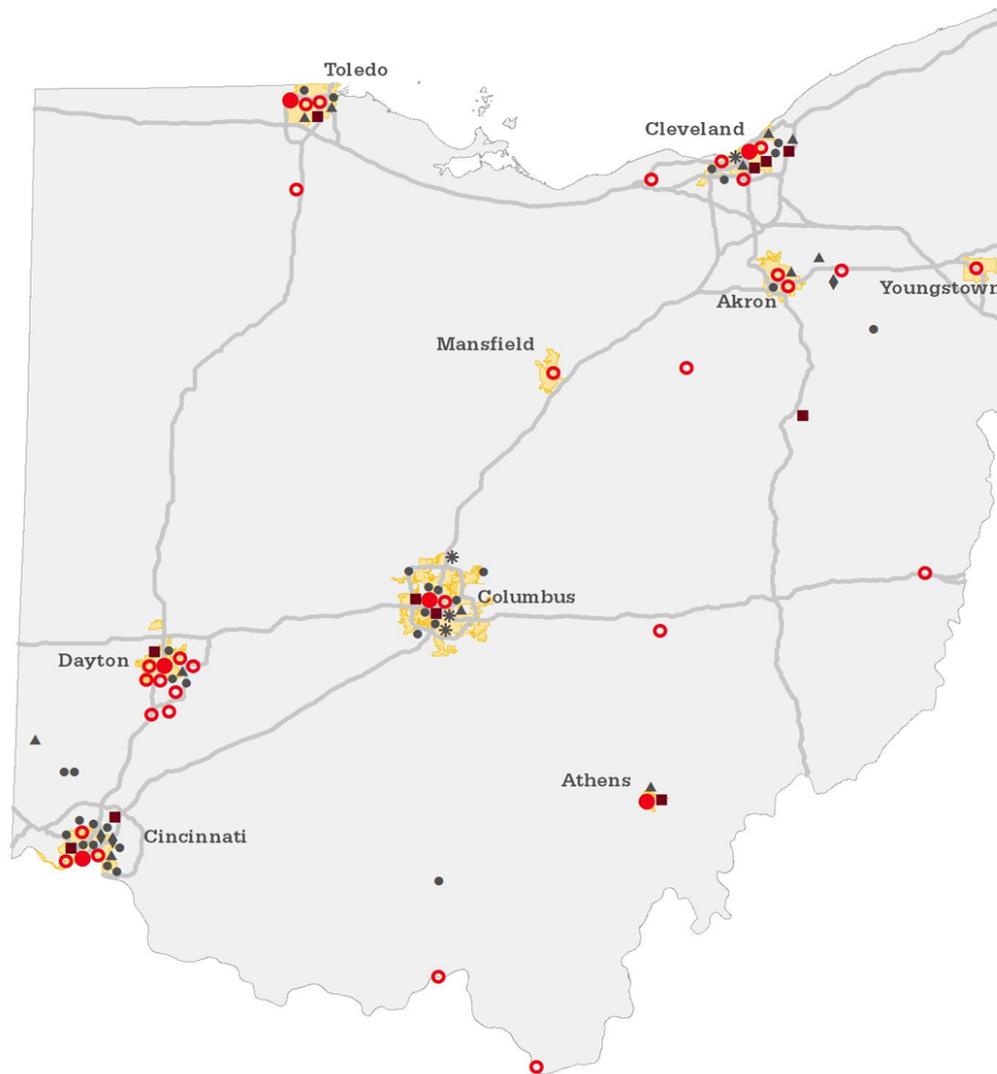
Legend

- 🔴 Entrepreneurial Services Provider Program (ESP)
- ⭕ ESP Collaborator
- ◼ Pre-Seed

Non-OTF Funded Activity

- ● Services
- ▲ Network
- ✳ Capital
- ◆ Talent

Key

- Interstate Highway
- City or Village

Toledo
Cleveland
Youngstown
Akron
Mansfield
Columbus
Dayton
Athens
Cincinnati

R090717A

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Ohio's Growing Entrepreneurial Ecosystem

Panel

- Bill Nemeth, Moderator
- Alvin Givens, Chase Columbus Startup Week
- Todd Whittington, Singularity University, Smart City Accelerator
- Adele Roth, Bounce
- Malcom Cooke, Sears think[box]

Program Status

Commercial Acceleration Loan Fund
Reconciliation – OTF Approvals to Current Portfolio

31 CALF Transaction Approved by OTF (2013 - 2017)	$38.7 MM
(7) Transactions De-Risked Prior to Closing	($9.9 MM)
24 Transaction Closed (Max Principal Exposure)	**$28.7 MM**
Less Amounts De-Risked After Closing	($1.8 MM)
Prospective Portfolio Size *	**$26.8 MM**

* Assumes all milestones are met by deadline and all available funds are requested.

Portfolio Size as of 9/1/2017	**$22.2 MM**
Less Principal Repayments Received	($1.3 MM)
Current Principal Exposed as of 9/1/2017	$20.9 MM

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Commercial Acceleration Loan Fund
Active Portfolio – Based on 24 Closed Loans

Defaulted
$500,000

De-Risked
$1,894,298

Projected Draws
$4,576,308

Principal Drawn
$22,285,244

Total Paid-to-Date
$1,359,087

6% of principal drawn-to-date.

Remaining 2017 Payments
$1,992,088

YE 2017:
Total projected payments will be $3,351,175.

Actual Amounts as of 9/1/2017
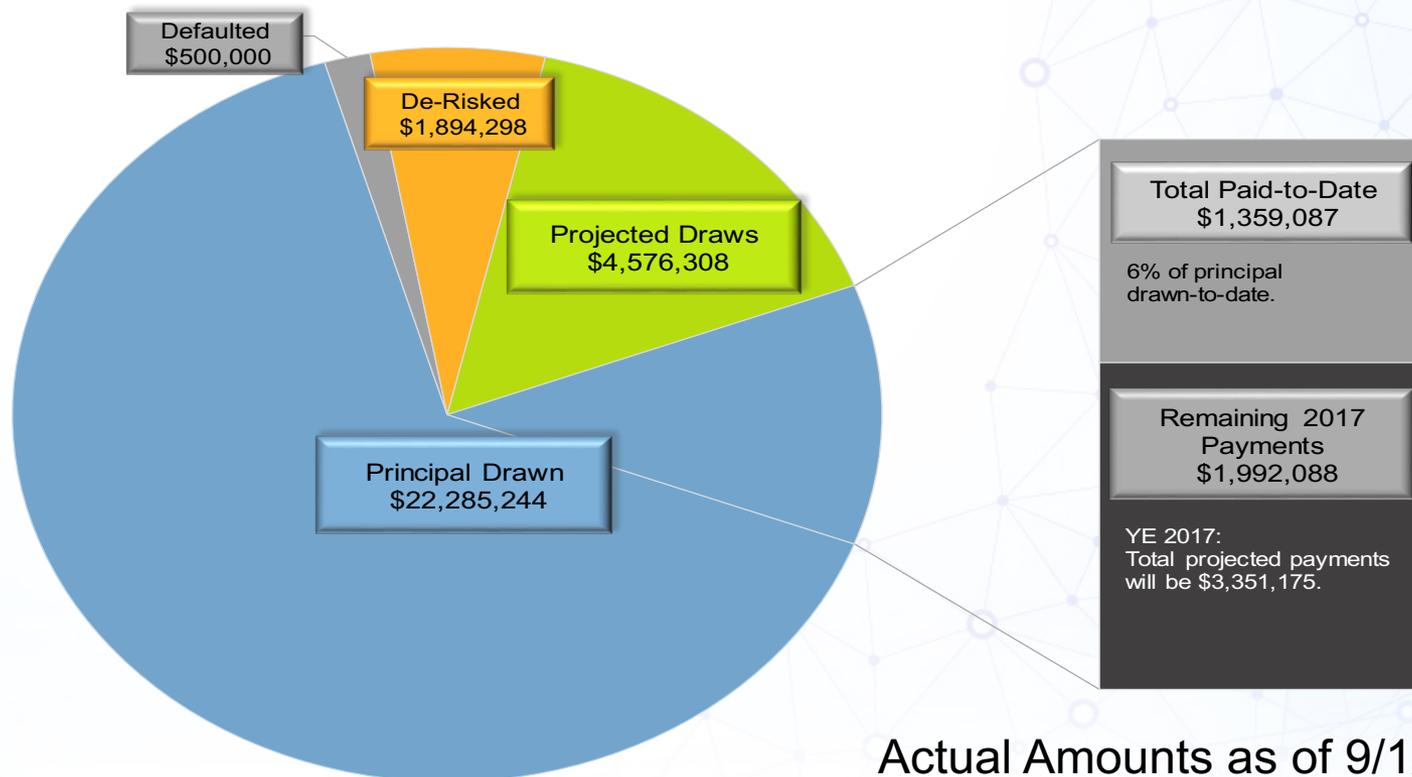
Current Default Rate = 1.29% (Approved Loans), 1.75% (Closed Transactions and 2.15% (Principal Drawn)

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Commercial Acceleration Loan Fund
Max Return, $40.5 M on $22.2 M Drawn to Date

Legend: Principal, Return

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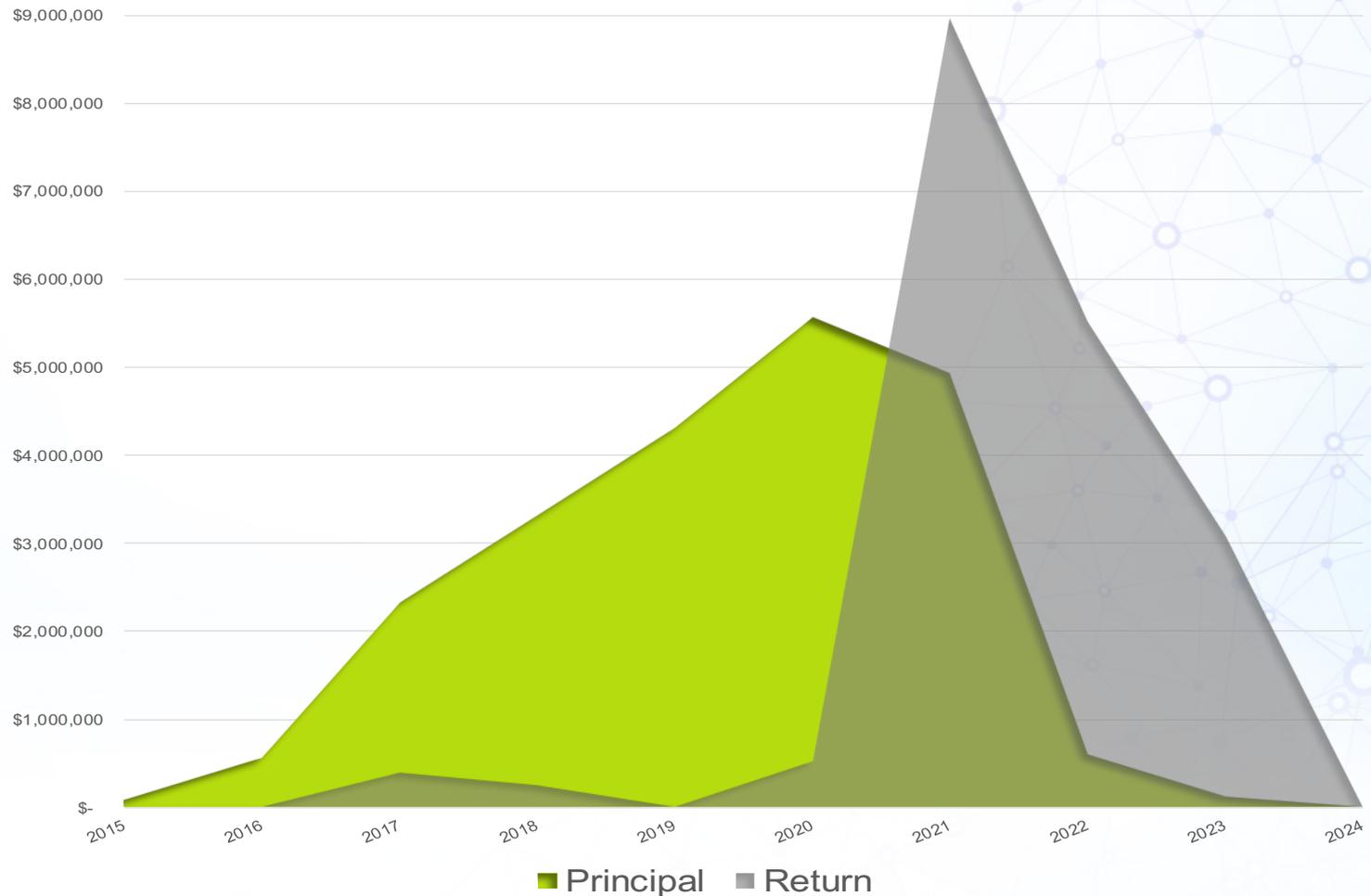
Commercial Acceleration Loan Fund
Portfolio: Industry Percentage (# Closed Loans)
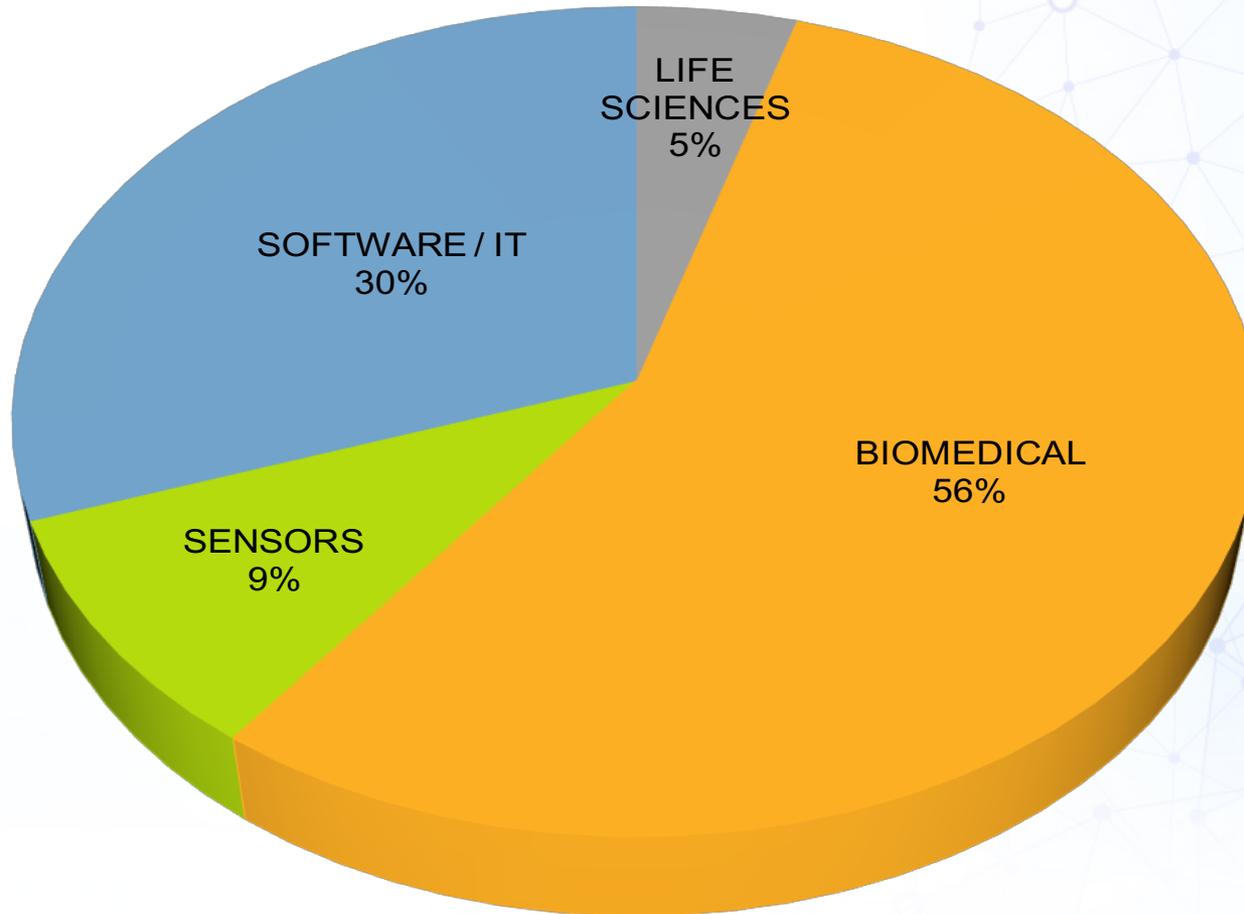
Pie chart segments:
- Consumer 4%
- Healthcare 13%
- B-to-C 4%
- B-to-B 25%
- Health 4%
- Commercial & Industrial 8%
- Diagnostics 9%
- Regenerative Medicine 4%
- Devices 29%

Legend:
- BIOMEDICAL (42%)
- SENSORS (12%)
- SOFTWARE / IT (42%)
- LIFE SCIENCES (4%)

Commercial Acceleration Loan Fund
Portfolio: Representation by OTF Region
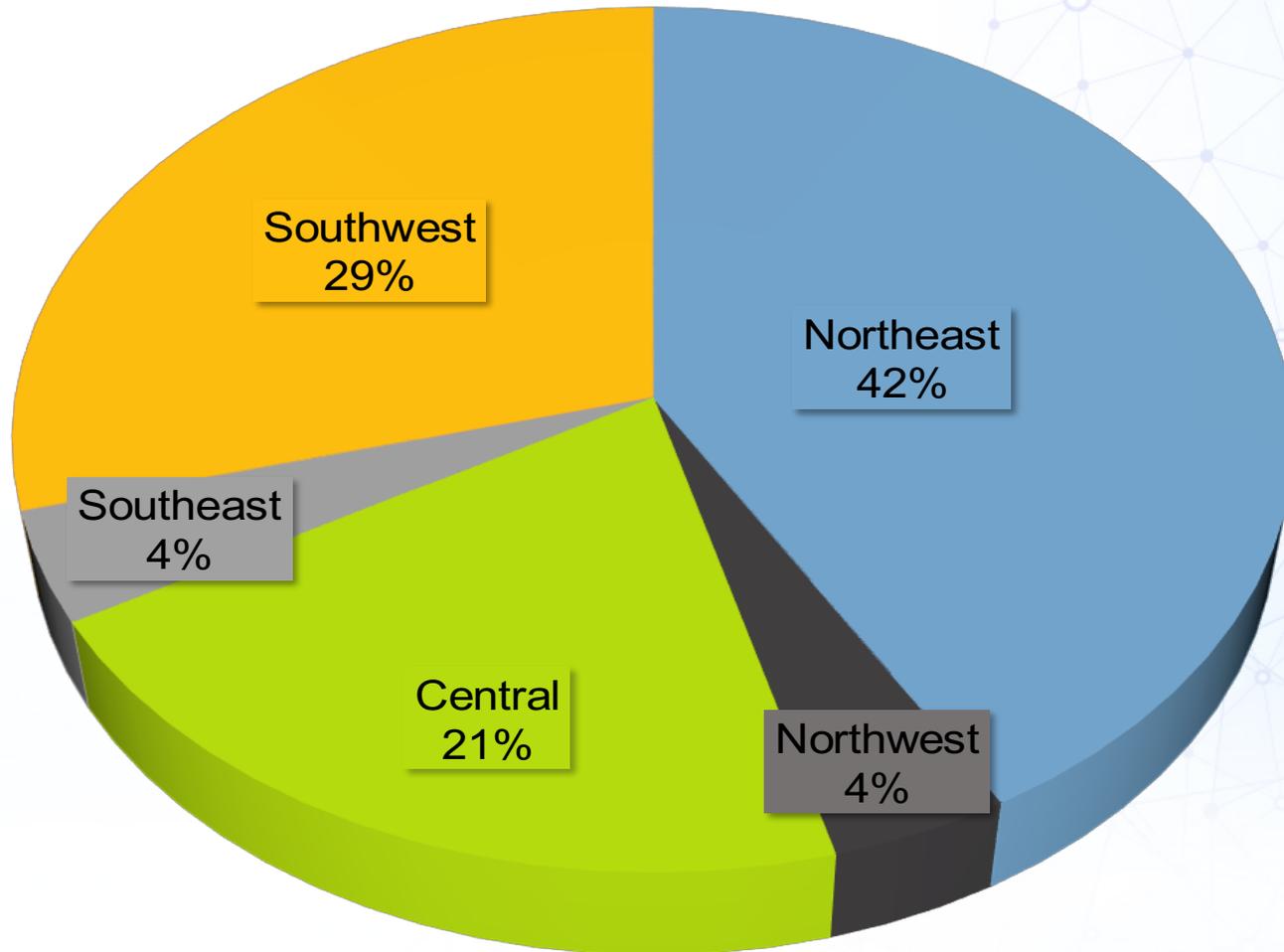
Commercial Acceleration Loan Fund
Program Metrics

247
Total Jobs Created

$157.6 M
Total Leverage

47% of (597) Goal

$25.5 M
Non-Dilutive

$23.6 M
Product Sales

$105 M
Follow On Equity

54%
outside Ohio

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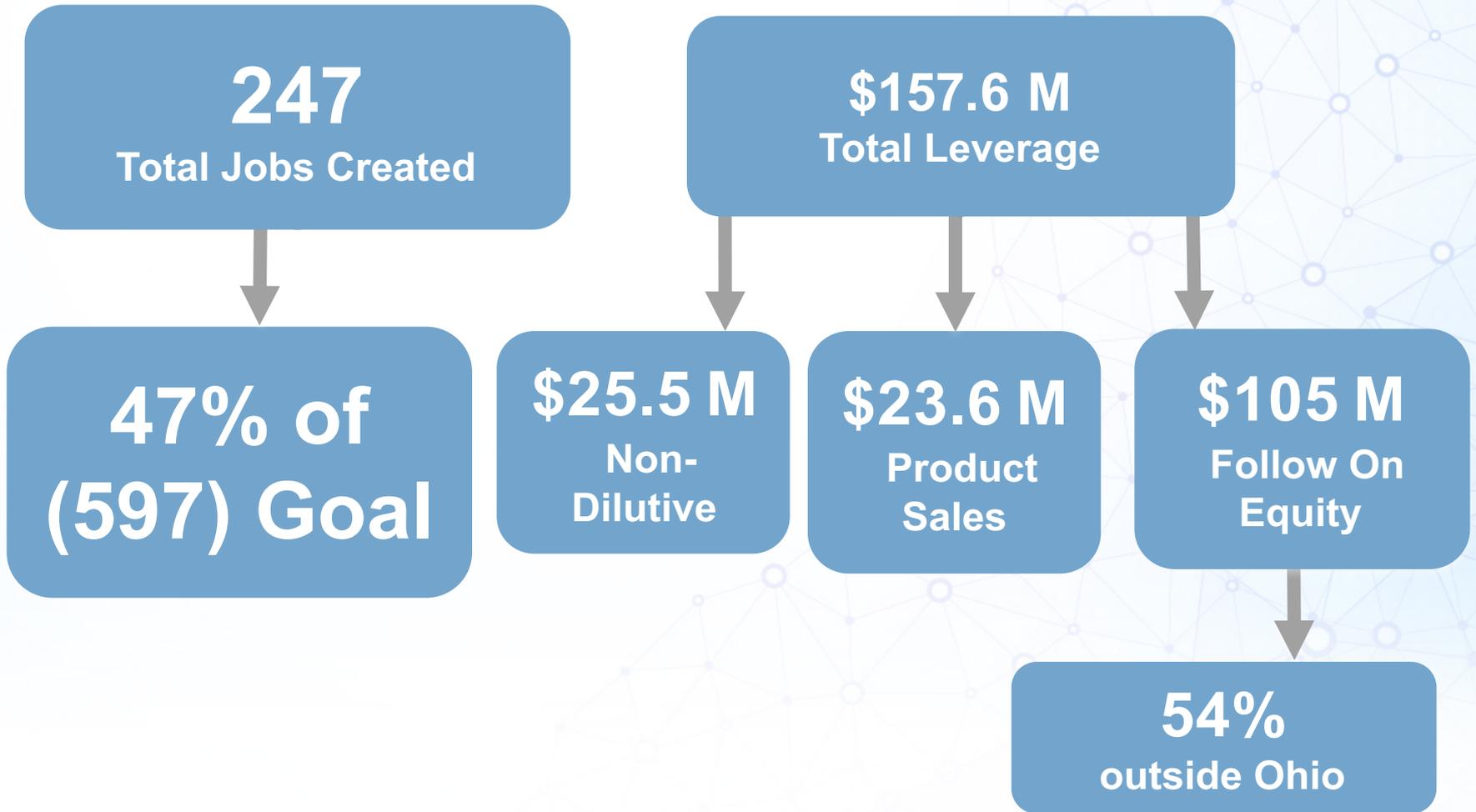
Commercial Acceleration Loan Fund
Research & Development

4 FDA Approvals

48 New Patents

19 Pending or Under R&D

> 150 Applications Pending

Commercial Acceleration Loan Fund
Company News

Seed Fund of Funds System

Deal Flow Trends

Metrics

Active Pre-Seed/Seed-Plus Portfolio

34 total funds awarded in 2013, '15 and '16

- 23 have funds remaining
- 7 fully invested
- 4 declined

$ Millions	OTF + Match	OTF Only
Total Original Award	$262	$109
Total Dry Powder	$168	$67
Pre-Seed Dry Powder	$104	$51
Seed-Plus Dry Powder	$64	$16

Dry Powder by Fund: $168M

| Fund	Value
CCF Ohio Biovalidation Fund VII	$30.0
NCT Ventures Fund IV	$23.1
Rev1 Ventures Fund I	$15.7
CincyTech Fund IV	$10.8
North Coast Venture Fund	$8.6
Case Technology University Hospitals Ventures Fund	$8.0
JumpStart Inclusion & Diversity Tech Fund	$7.3
LaunchDen Capital Fund	$6.0
Northeast Ohio Innovation Pre-Seed Fund	$6.0
CCF Ohio BioValidation Fund VI	$6.0
JumpStart Evergreen Fund XI	$5.9
JumpStart NEXT Fund (II)	$5.8
Valley Growth Ventures Fund I	$4.8
Rocket Ventures Fund II	$4.8
Rev1 Ventures Life Sciences Fund	$4.2
Accelerant Fund I	$3.7
North Coast Angel Fund IIIb	$3.5
OTAF Fund V	$3.2
NCAF Fund III	$3.1
TechGrowth Fund III	$2.8
QCA First Fund V	$2.3
JumpStart Next Fund (I)	$1.7
Impact Angel Fund I	$0.9

Legend: ■ Total Dry Powder $M ■ Total Deployed $M

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Seed-Plus Dry Powder: $64M

Horizontal bar chart showing Total Dry Powder $M (green) and Total Deployed $M (pink) by fund:

Fund	Total Dry Powder $M	Total Deployed $M
CCF Ohio Biovalidation Fund VII	~20	~0
NCT Ventures Fund IV	~15	~3
Rev1 Ventures Fund I	~8	~1
CincyTech Fund IV	~7.5	~10
North Coast Venture Fund	~7.5	~0
JumpStart NEXT Fund (II)	~6	~3

X-axis: $0, $5, $10, $15, $20

Legend: ■ Total Dry Powder $M ■ Total Deployed $M

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Dry Powder by Region

$4.8M / $2.4M
1 Fund

- RGP

$3.8M / $1.2M
1 Fund

- Accelerant

$13M / $5M
2 Funds

- CincyTech
- QCA

$98M / $31M
14 Funds

- 4 JumpStart
- 3 NCAF
- 2 CCF
- 1 each, 5 others

$2.8M / $1.1M
1 Fund

- TechGrowth

$46M / $17M
4 Funds

- 2 Rev1 Ventures
- OTAF
- NCT

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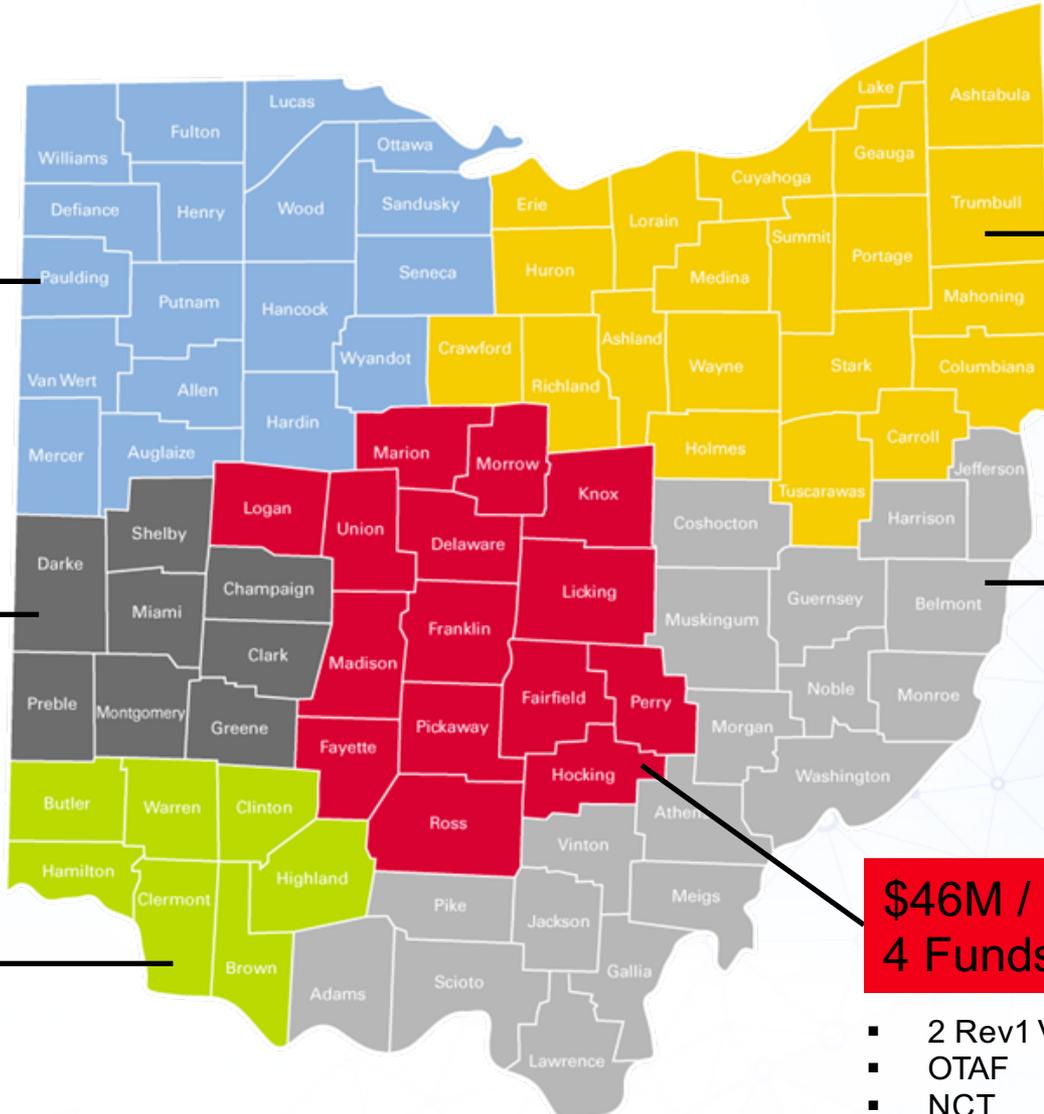
Dry Powder by Organization

ESPs	$
JumpStart (4)	$20.7
Rev1 (2)	$19.9
CincyTech	$10.8
Toledo	$4.8
TechGrowth	$2.8
Dayton	$3.7
Total (10)	**$62.7**

Angels	$
NCAF (3)	$15.2
OTAF	$3.2
QCA	$2.3
Impact	$0.9
Total (6)	**$21.6**

Private/NP	$
Clev. Clinic (2)	$36.0
NCT	$23.1
Case	$8.0
LaunchDen	$6.0
LCCC IF	$6.0
Valley Growth	$4.8
Total (7)	**$83.9**

US Angel and Seed Activity

The trend nationally is similar, although much more recent

US angel & seed activity

PitchBook-NVCA Venture Monitor

Legend: Deal Value ($B), # of Deals Closed

Values (by quarter): $464, $399, $383, $1,310, $667, $549, $512, $716, $795, $939, $1,228, $874, $971, $1,075, $1,312, $1,542, $1,271, $1,354, $2,051, $1,880, $1,995, $2,186, $2,055, $1,938, $1,630, $1,748, $1,687, $1,507, $1,524, $1,651

Quarters: 1Q 2Q 3Q 4Q (2010), 1Q 2Q 3Q 4Q (2011), 1Q 2Q 3Q 4Q (2012), 1Q 2Q 3Q 4Q (2013), 1Q 2Q 3Q 4Q (2014), 1Q 2Q 3Q 4Q (2015), 1Q 2Q 3Q 4Q (2016), 1Q 2Q (2017)
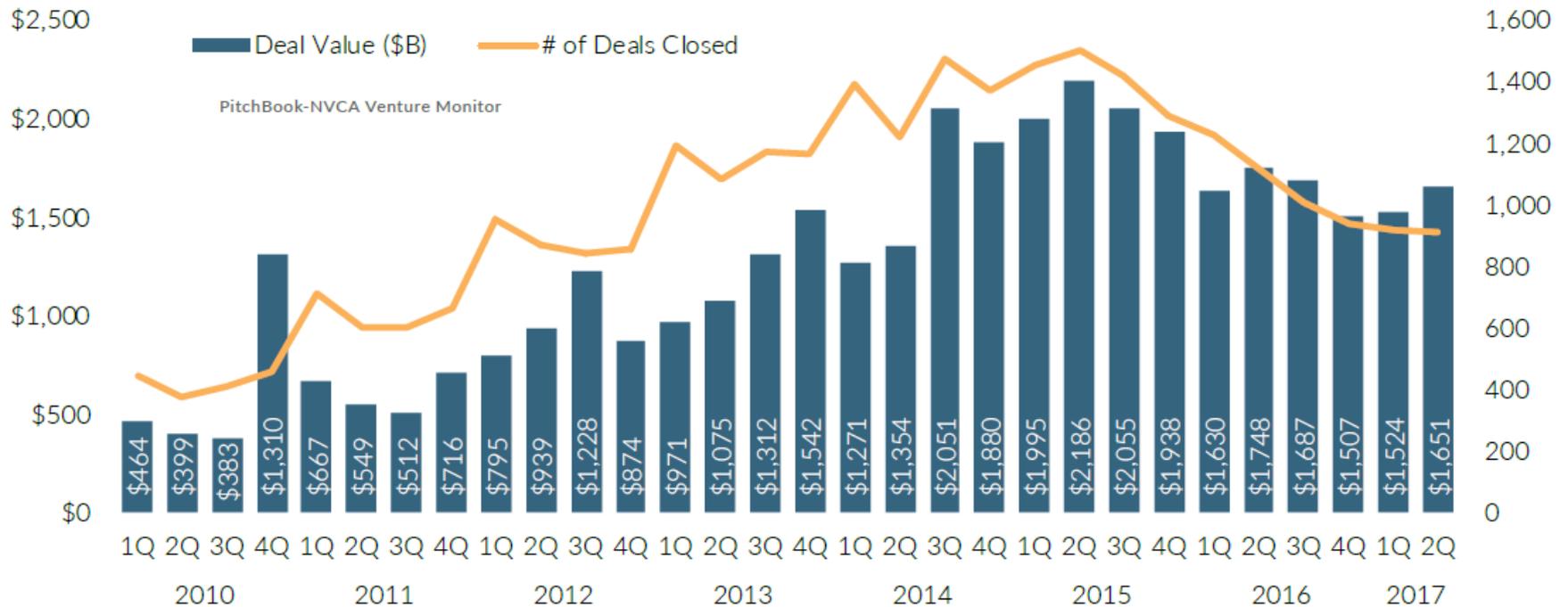
PitchBook-NVCA Venture Monitor
*As of 6/30/2017

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US Angel and Seed Activity

As 'A' rounds have gone later, deal sizes have increased significantly

Median US angel & seed deal size
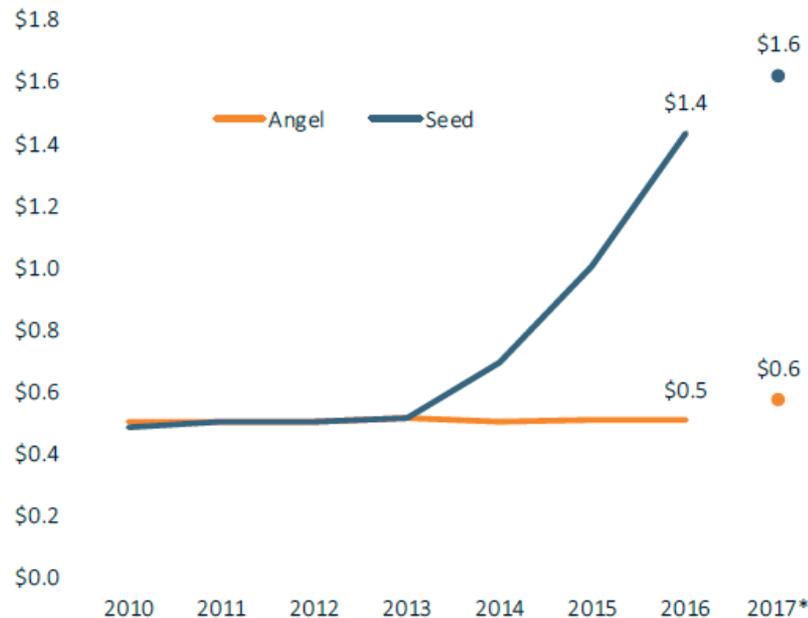
US angel & seed activity (#) by size

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Share of First-Time Investments

The number of deals to follow-on investments has risen

of Companies by Frequency

Stacked bar chart showing First Time Investments (green) and Follow-on Investments (blue) by year:

Year (total)	First Time Investments	Follow-on Investments
2006 (37)	22	15
2007 (40)	23	17
2008 (58)	34	24
2009 (68)	32	36
2010 (90)	39	51
2011 (103)	46	57
2012 (117)	47	70
2013 (98)	34	64
2014 (85)	22	63
2015 (77)	24	53
2016 (76)	24	52
2017 (53)	13	40

■ First Time Investments   ■ Follow-on Investments
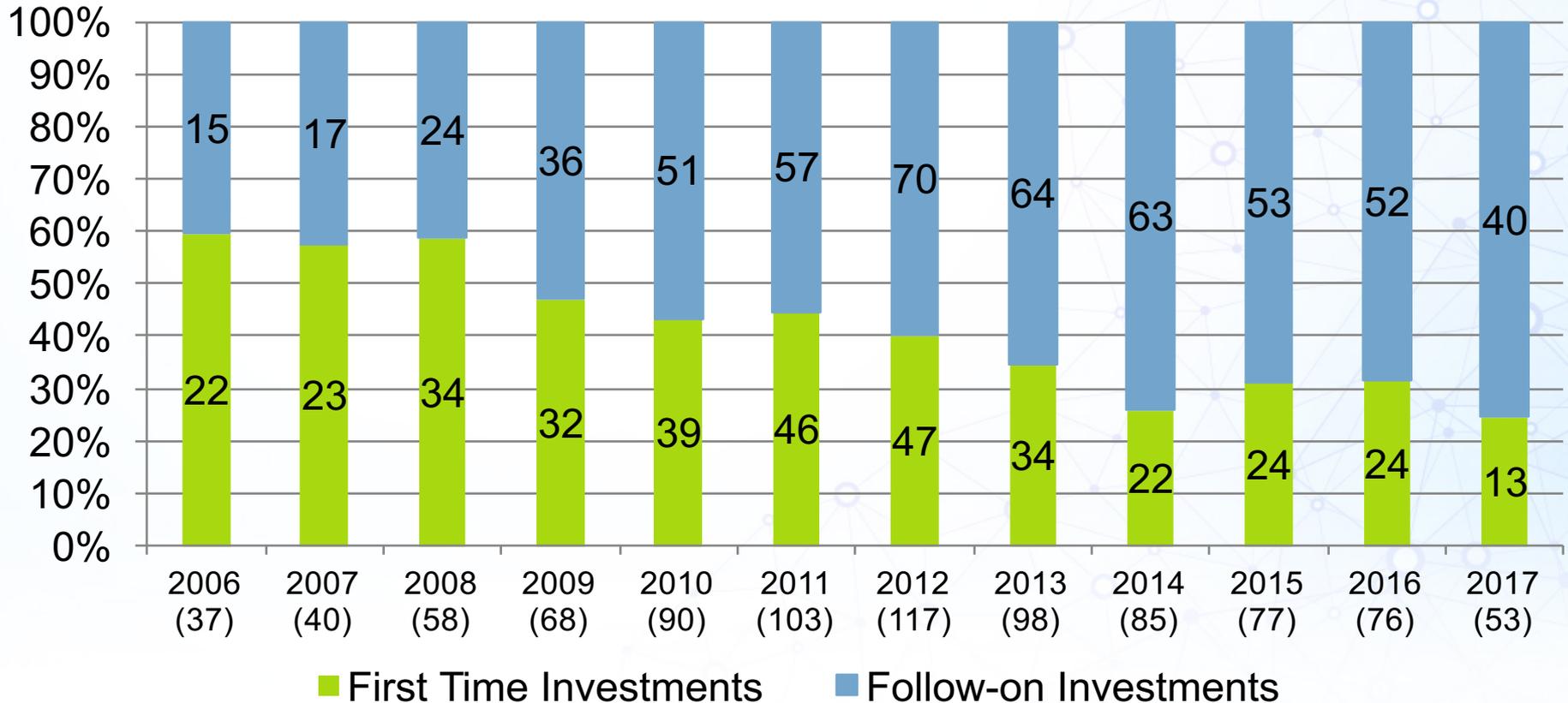
Total Investment by Tech Focus Area

Software / IT investments increasing; all others tech areas remain steady

Legend:
- Software / IT
- Biomedical / Life Sciences
- Advanced Materials
- Sensors
- All Other
- Total Companies

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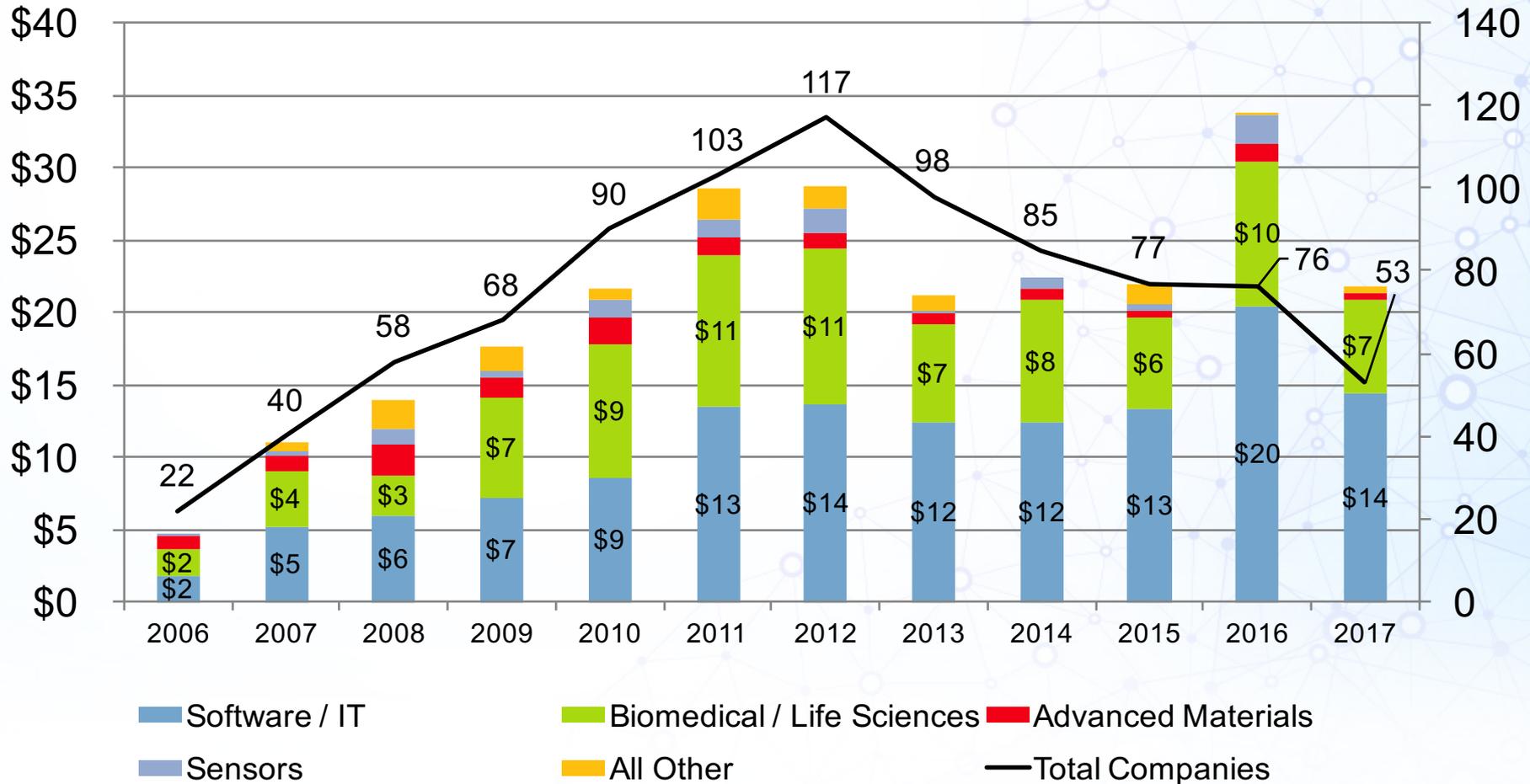
Investment in Software / IT

Most of the increase in software / IT investment is driven by B-to-B

Legend: B-to-B, B-to-C, Healthcare, Cyber/Defense, Financial, All Other, Total Companies
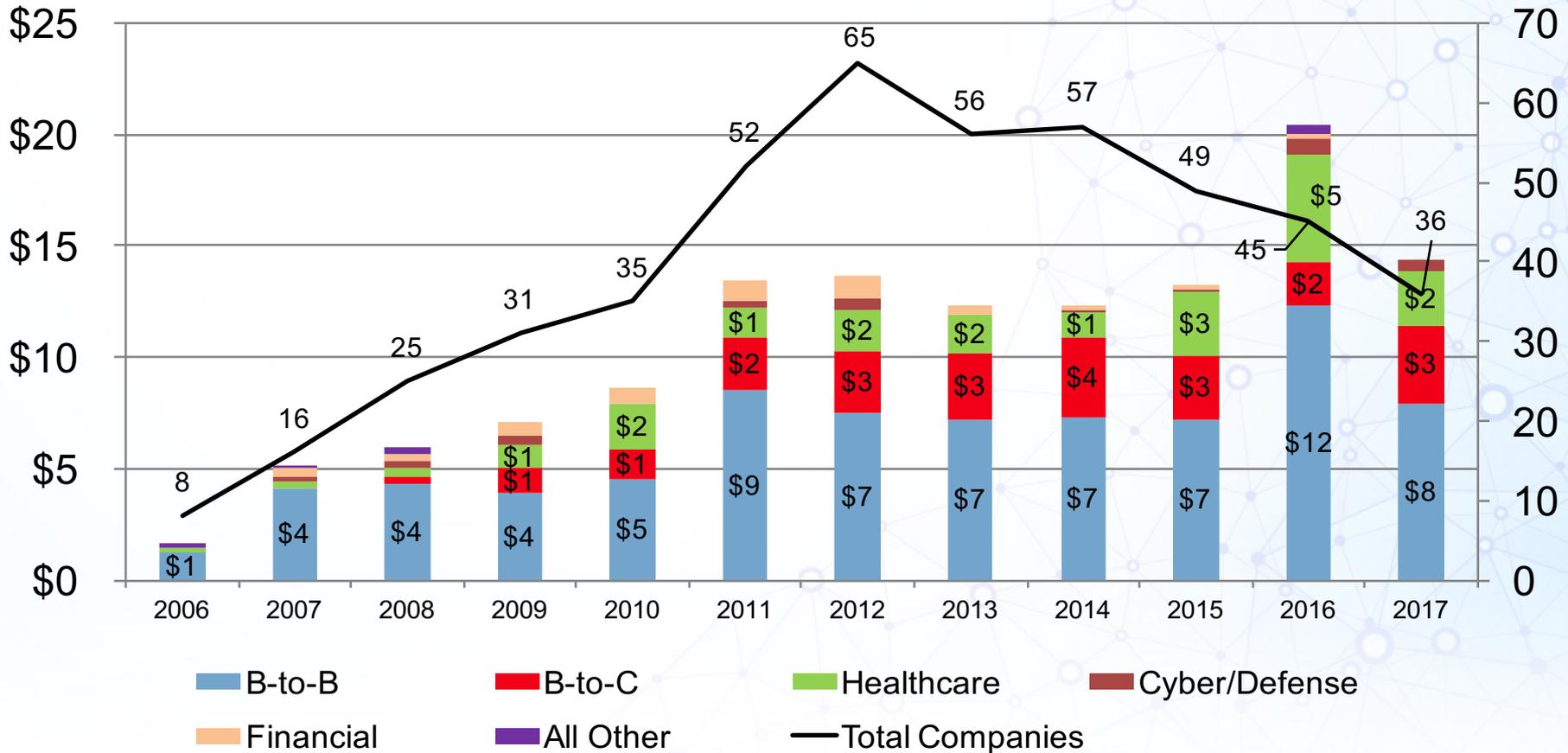
Investment in Biomed / Life Science

Biomedical / life sciences investment is consistent between $7-$11M annually

Legend: Devices, Diagnostics, Pharmaceuticals, Other, Total Companies
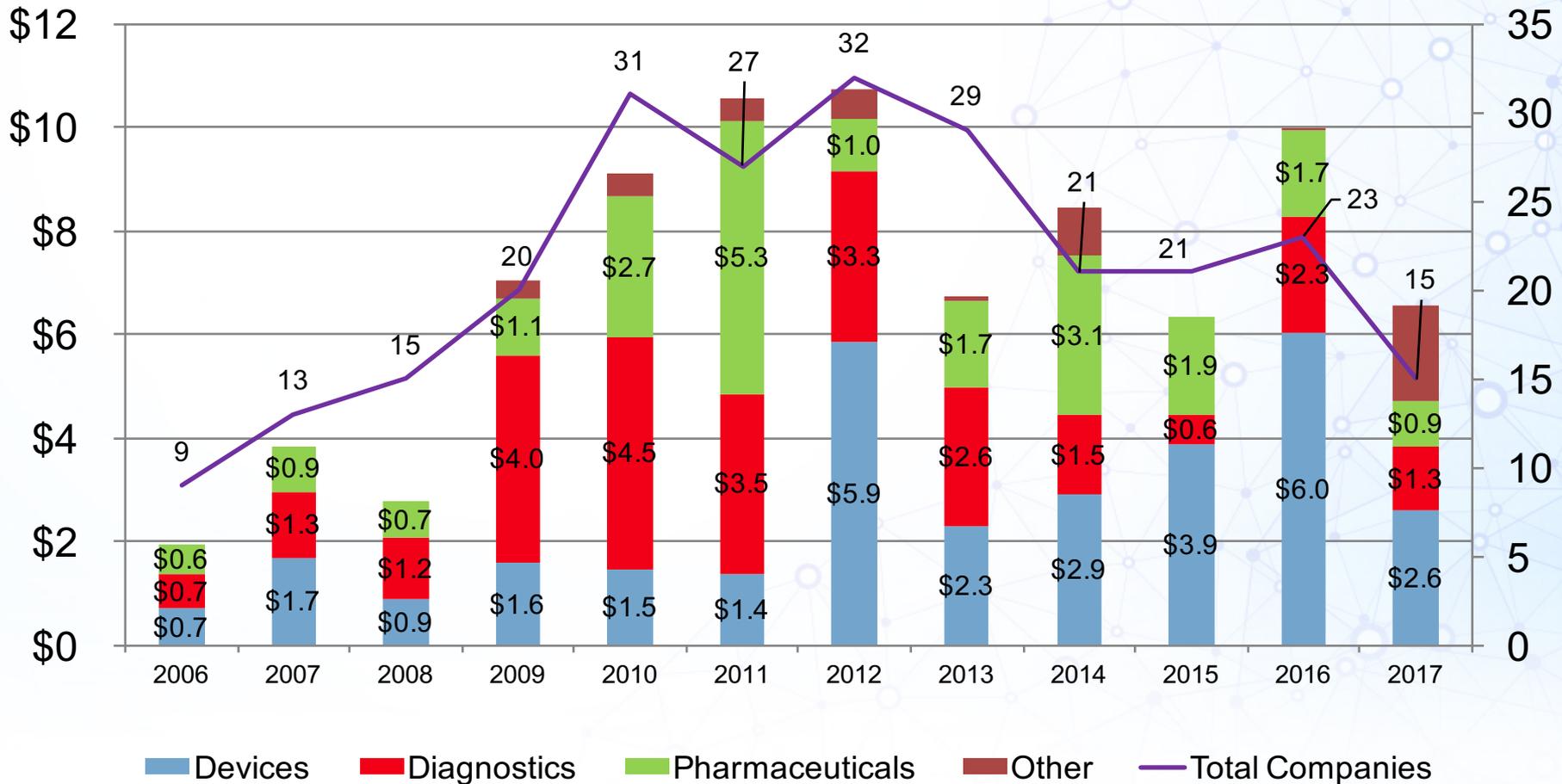
Vintage by Tech Focus Area

The percentage of new companies each year are increasingly software / IT

Year	Biomedical / Life Science	Software / IT	Others
2006 (22)	9	8	5
2007 (23)	5	11	7
2008 (34)	5	18	11
2009 (32)	9	14	9
2010 (39)	15	13	11
2011 (46)	10	30	7
2012 (47)	11	31	5
2013 (34)	11	22	2
2014 (22)	3	17	2
2015 (24)	7	15	2
2016 (24)	6	16	2
2017 (13)	4	9	
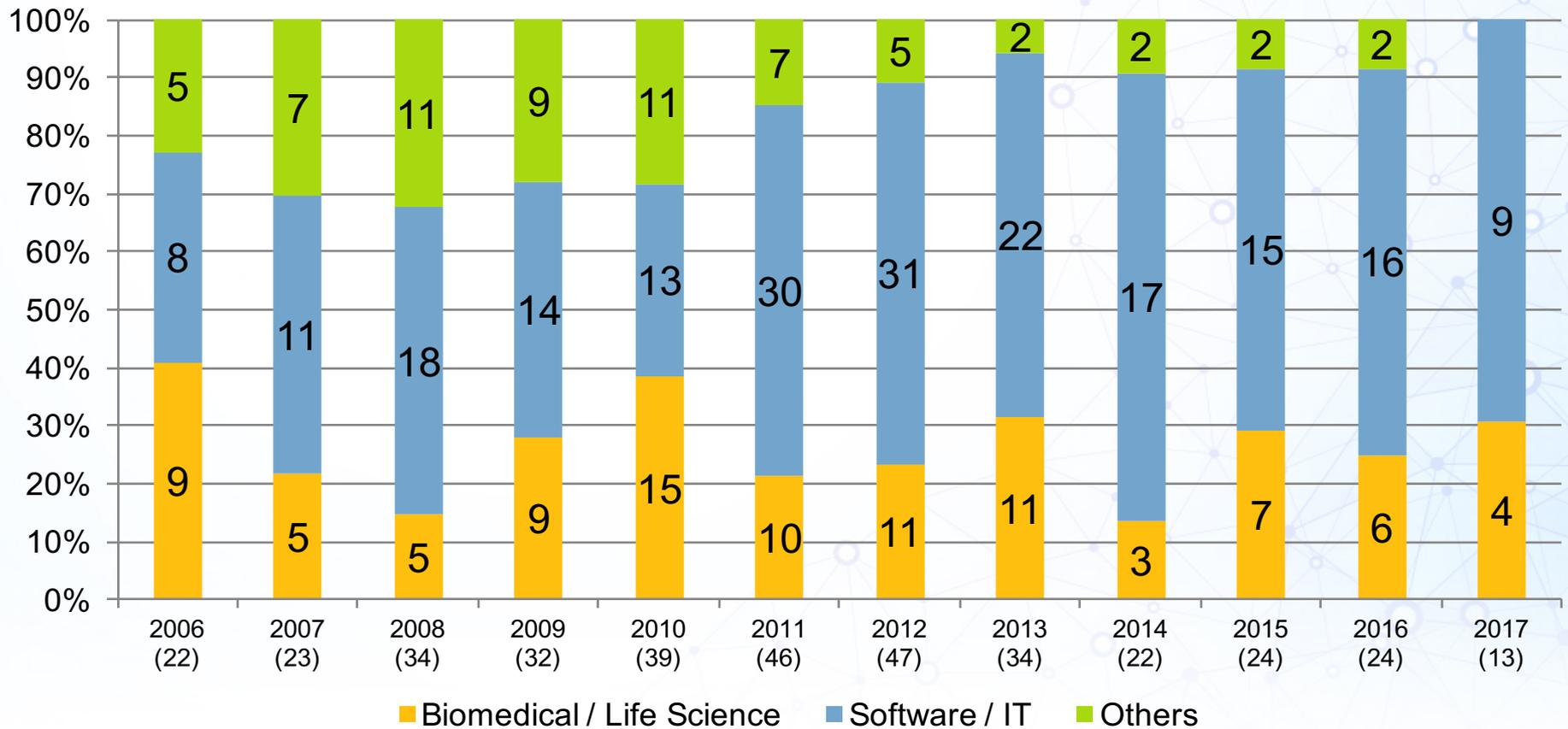
(# companies in that class)

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Total New Jobs Created

Green indicates net new job creation from the prior year
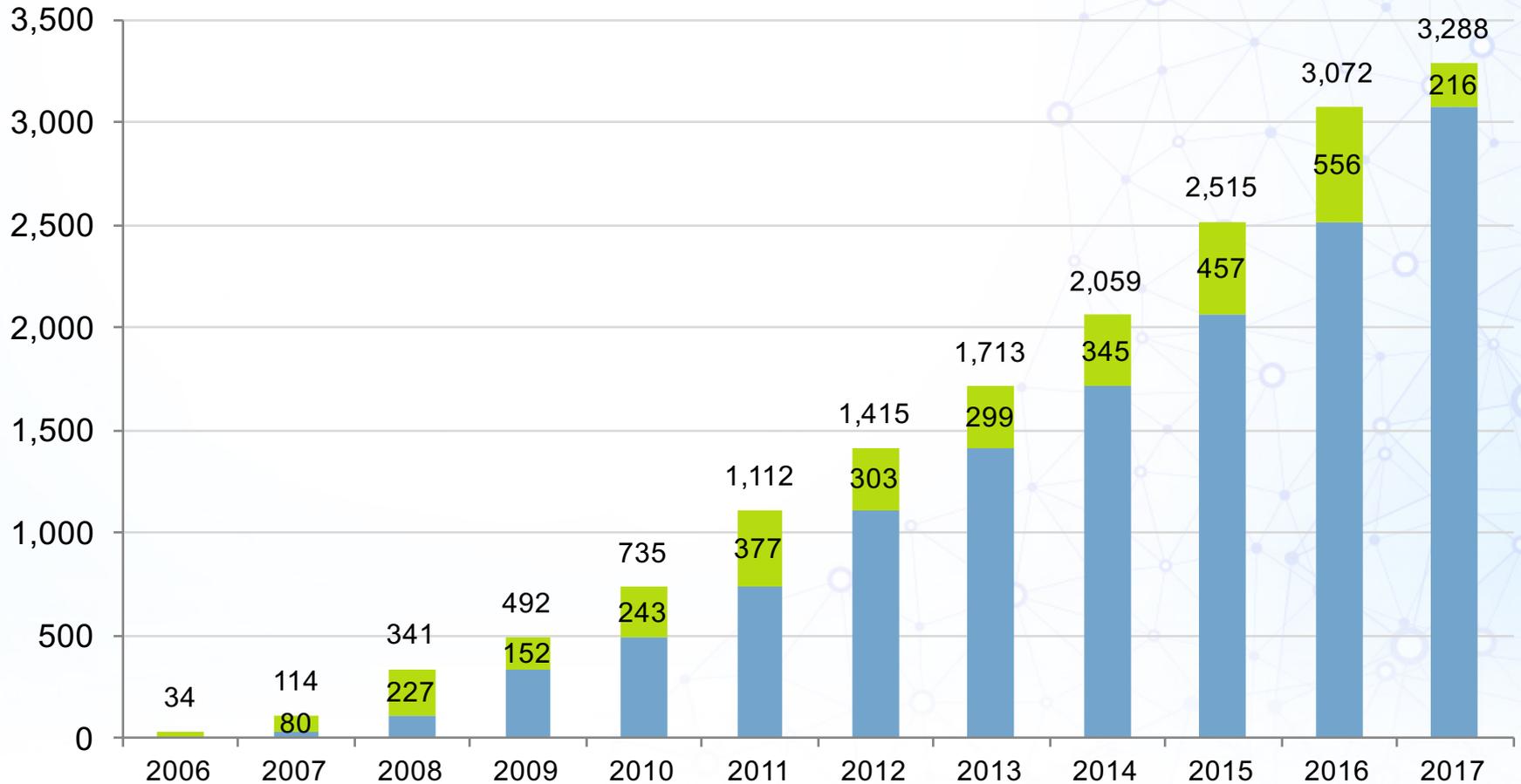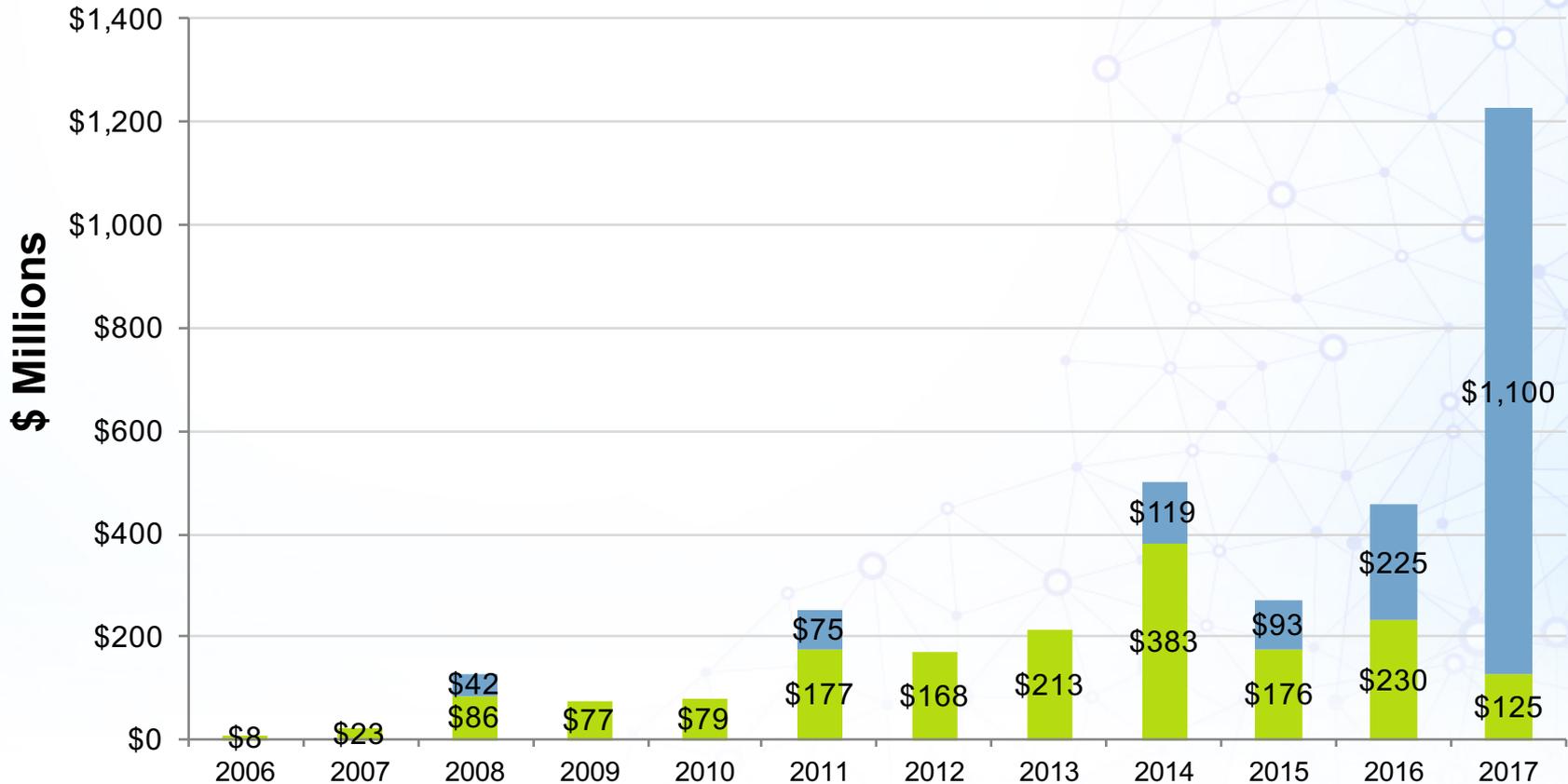
Product Sales / Revenue Generated

Green indicates new product sales / revenue generated in that year
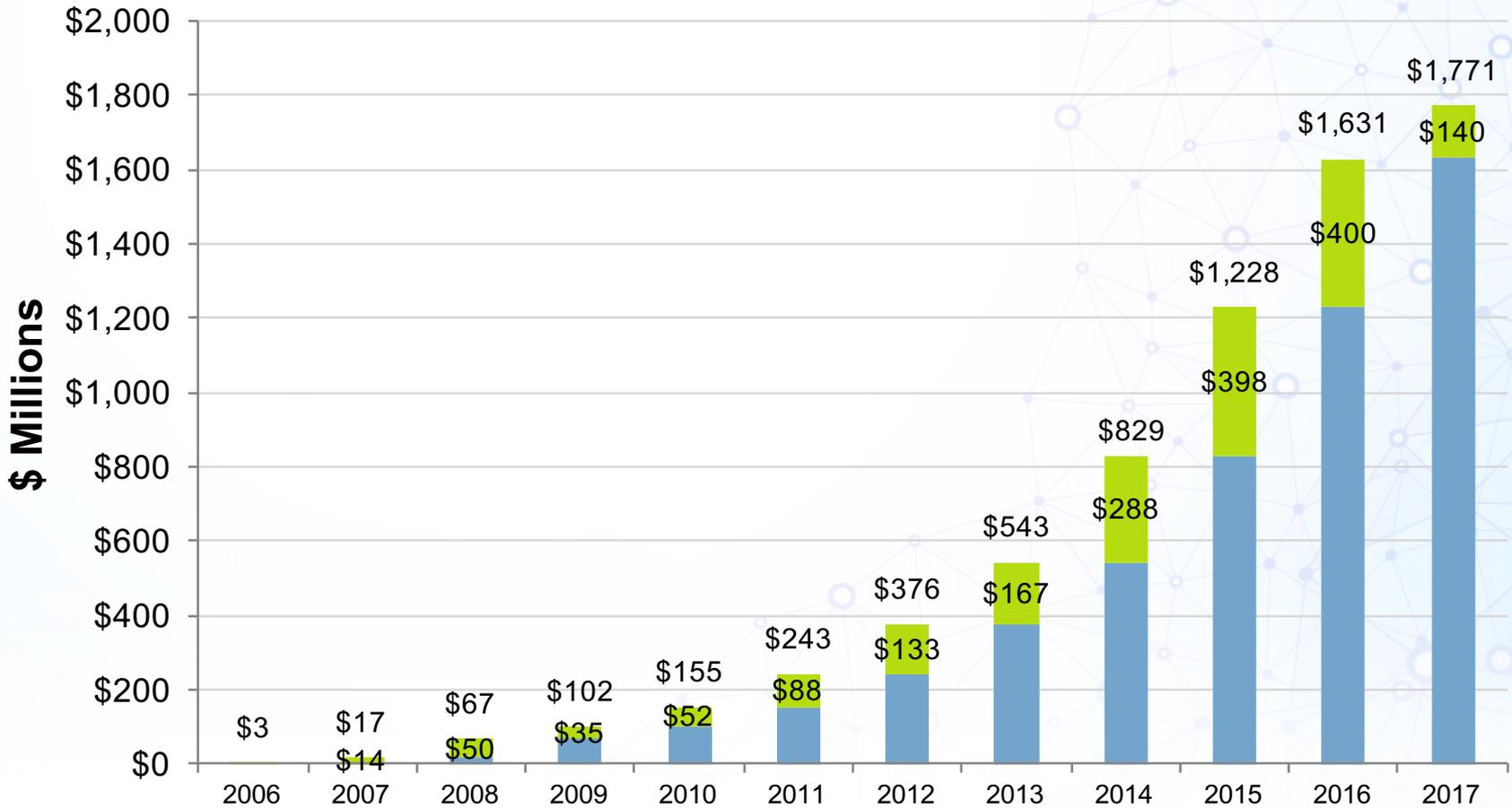
Questions?

Lunch
KeyBank/JumpStart Partnership

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KeyBank

Business Boost & Build

Powered by JumpStart

Ohio Third Frontier Retreat
September 14, 2017

jumpstart

KeyBank Foundation Strategic Framework

THRIVING COMMUNITIES

NEIGHBORS

EDUCATION

WORKFORCE

SERVICE

Create prosperity through advancing economic inclusion; communities and housing that are safe, affordable and stable; and the development of small businesses

Improve intellectual capital through higher education, vocational and secondary education graduation and completion

Enhance economic vitality through jobs creation, attainment, retention and workforce development

Promote citizenship through engaging employees in board and civic leadership and hands-on service

Foundation Strategic Investments

Volunteerism & Community Support

- Diversity and Inclusion
- Financial Capability
- Transformational Outcomes
- Measureable Impact
- Sustainability

jumpstart

KeyBank and JumpStart's Long Term Partnership

- KeyBank has been JumpStart's most significant single corporate partner since 2004, through funding, board leadership and community engagement

- The KeyBank Foundation has provided more than $1.1M, to match ESP funds, to support JumpStart's identifying and supporting minority and female entrepreneurs

- KeyBank values the alignment of Ohio Third Frontier and the ESP program, and JumpStart's capabilities, with its own goals and objectives

- The KeyBank Business Boost and Build Program, powered by JumpStart, reflects a long-term (4 year) commitment to these goals at a dramatically new scale of commitment

KeyBank

Business Boost & Build
Powered by JumpStart

Ohio Activity for Four Years: 2017 - 2021	Outcomes Over Four Years of the Program		
	Businesses or individuals engaged	% Minority, Female-led	New Jobs Created
#1 Accelerate NEO Tech Startups and Scaleups with technical assistance (aligned with the ESP)	2,000 businesses	25%+	4,000+
#2 Support "Core City" companies located in Cleveland neighborhoods	1,200 businesses	70%+	600+
#3 Internships and job placement for Cleveland Metropolitan School District students	1,000 students	70%+	
#4 Dramatically increase the participation of minority, female, and rural entrepreneurs and those seeking to work in their companies through the statewide KeyBank Center for Technology, Innovation, and Inclusive Growth	1,000 individuals 500 businesses	100%	750+
Total in Ohio	4,000+ businesses 2,000 individuals or students		5,300+ new jobs created

jumpstart

How We Can Work Together to Increase Diversity of Our Ecosystem via the KeyBank Center

KeyBank Market Presidents, Corporate Responsibility Officers, JumpStart, and others will meet to identify potential partnerships, particularly for the statewide KeyBank Center for Technology, Innovation, and Inclusive Growth
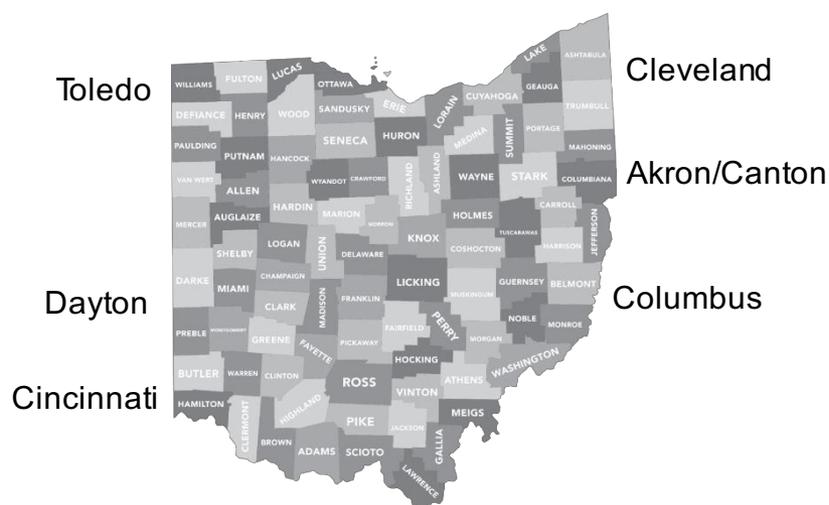
Through our discussions, we will seek:

- Programs with proven impact to scale the participation of minorities, females, and those in rural communities in the innovation economy, and complement/fill in gaps in the existing ecosystem
- Additional partners who value these activities and through financial and other support, provide opportunities for even more Ohio residents

jumpstart

KeyBank/JumpStart Partnership Panel

- Cathy Belk, JumpStart
- Lamont Mackley, JumpStart
- Karen White, KeyBank

Another Big Win for Ohio: CoverMyMeds

In Their Words

"The story of Sense Diagnostics is the story of resources in Ohio to help entrepreneurs. At no point have we felt we were going it alone. That's Ohio's commitment to entrepreneurs."
–**Dan Kincaid**, CEO, Sense Dianostics

"Entrepreneurship in Ohio is great. We have access to tremendous talent and an ability to keep costs lower than other parts of the U.S. Everybody has been wonderful, and there's certainly a spirit of community you sense in the state."
-**Darrel Bass**, Founder and CEO, Bass International Software

"When you talk about the startup 'community' in Ohio, it's real and we've felt it. Having a support system like that is invaluable to us."
-**Sam Malik**, Co-founder and CEO, Meelance

Growing Content

On the topics of: *Capital, Companies, Entrepreneurship, Founders, Industries & Research*

39 Original Founder Stories

160+ Original Videos

330+ Original Articles

2,400+ News Articles

Focus on Diversity and Inclusion

Hillman Accelerator Helps Minority and Women-Led Startups Succeed

Posted on August 17, 2017 by lisacolbert in Entrepreneurship, Featured Stories // 0 Comments

This is a two-part story on a new business accelerator founded in Cincinnati, Ohio. Part One provides background on the program designed to assist minority and women-led startup companies. Part Two, released following the completion of the program in October 2017, will highlight the experiences of the companies in the inaugural class.

- *'Diverse talent is crucial to a company's success' – i.c.stars leader*

- *Former Bengal launches minority business accelerator*

- *Don't ignore the innovative power of inclusion*

- *BlkHack meetup to share pathways to the startup world for minorities*

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Ohio Third Frontier Tackling Opioid Crisis

High-Tech Ideas to Fix Opioid Crisis Compete for Ohio Grants

A call by Ohio Gov. John Kasich for scientific breakthroughs to help solve the opioid crisis is drawing interest from dozens of groups with ideas including remote controlled medication dispensers and pain-relieving massage gloves.

U.S.News & WORLD REPORT

FOX NEWS.com — Opioid crisis sparks innovative proposals in fight against epidemic

The Columbus Dispatch — Massage gloves, pain blockers: Ohio turns to tech to battle opioid crisis

CRAIN'S CLEVELAND BUSINESS — NineSigma Inc. of Beachwood receives $8 million to run Ohio Opioid Technology Challenge

9 WCPO CINCINNATI — Can tech solve the opioid crisis?

cleveland.com — High-tech ideas to fix opioid crisis compete for Ohio grants

Video Clips

Q13 FOX — Ohio's Governor is helping find a way to end the heroin problem

FOX 8 WJW·CLEVELAND — Governor John Kasich giving an incentive to innovators who want to help fight the states incredible opioid crisis

FOX 5 — Innovators Fighting Opioid Epidemic

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Focus on Lifestyle

Spreading the Word – Our Metrics

12,000+
2014

30,000+
2015

37,000+
2016

29,000+
2017

Continued Projected Growth
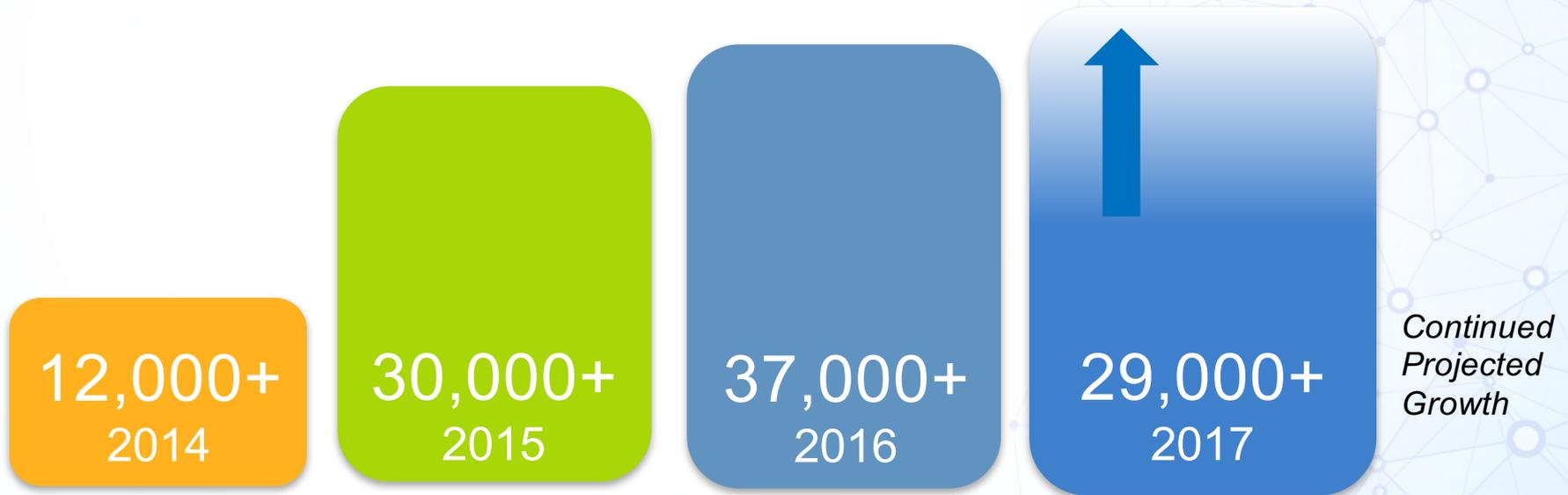
- More than 109,000 views since launch
- Growing year over year

Social Media

2,100+ Twitter followers

1,343   1,398   1,439   1,505   1,579   1,649   1,718   1,770   1,815   1,904   1,966   2,049   2,102

September, 2016   November, 2016   January, 2017   March, 2017   May, 2017   July, 2017   September, 2017
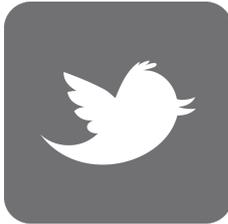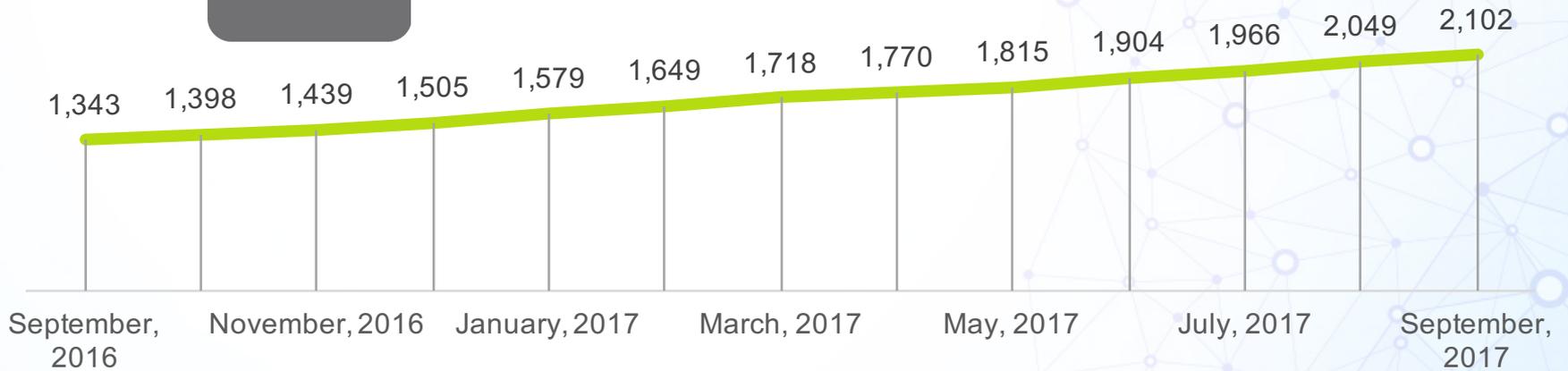
425+ Facebook page likes

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Out-of-State Reach

Seattle
Portland
Minneapolis-St. Paul
Ann Arbor
Boston
Salt Lake City
Chicago
Pittsburgh
Philadelphia
San Francisco
Provo
Boulder
Champaign
Baltimore
Indianapolis
Washington DC
San Jose
Denver
St. Louis
Raleigh
Los Angeles
Atlanta
Columbia
Dallas
Tuscaloosa
Fort Hood
Gainesville
Austin
Orlando

R090617B
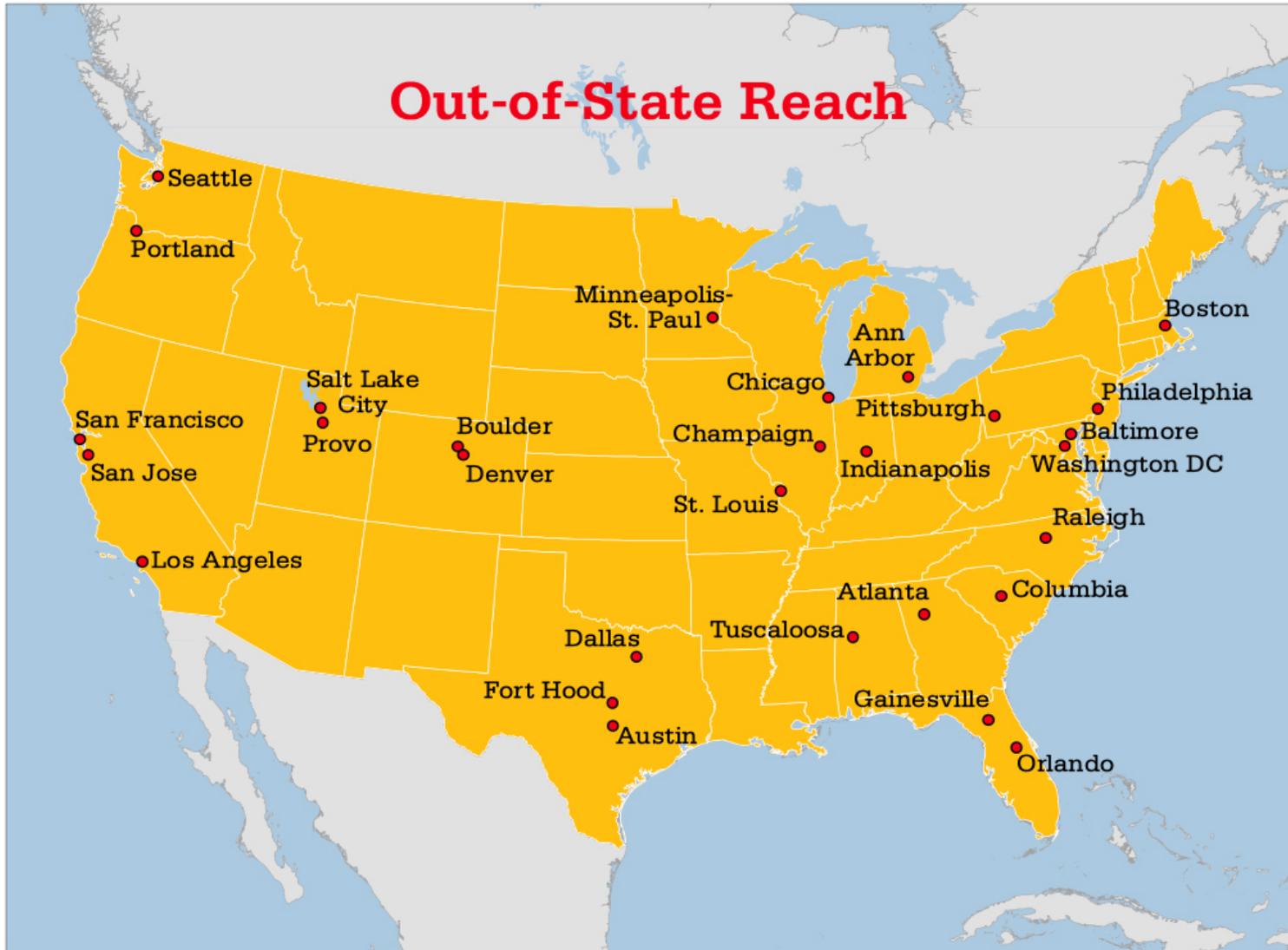
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What's Next?

- *Continue to grow TechOhio distribution list, out-of-state outreach*

- *Leverage our partnerships to maximize messaging*

- *Continue to evaluate performance, reach and impact*

- *Opportunities to co-brand with Ohio. Find it Here.™*

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It's Happening in Ohio

Roundtable Discussion

Moving Forward: CY 2018

Opioid Programs Update

Opioid Programs Update

Proposals Received: 29

OTF Funds Requested: $53M

Proposal by Product Categories:

Health Technology: 9

Medical Devices: 9

Pharmaceuticals: 6

Diagnostics: 5

Proposal by Type of Organization:

Companies: 18

Universities/Research Institutes: 8

Non-Profits: 3

Opioid Programs Update

Ohio Opioid Abuse, Prevention and Treatment Technology Initiative

Evaluator: Quantum Commerce
Greg Workman

Opioid Programs Update

Ohio Opioid Technology Challenge

Challenge Manager: NineSigma

Angela Herblet

AGENDA

Program Overview

Challenge Timeline & Structure

- Idea Phase
- Challenge Phase
- Product Phase

Next Steps

PROGRAM OVERVIEW

- **The Ohio Third Frontier is investing $20 million to accelerate scientific breakthroughs that could help address the U.S. opioid crisis.**
  - *$12 million dedicated to competitive research and development grants*
  - *$8 million for the Ohio Opioid Technology Challenge (OOTC)*

- **The OOTC will use an innovation competition model to solicit a broad set of new ideas, approaches and technologies to combat the crisis.**

- **Three phases of the challenge program:**
  - *Idea Phase*
  - *Challenge Phase*
  - *Product Phase*

CHALLENGE PHASES

NINESIGMA

Idea Phase

Engage & Share
Up to $70,000 in prizes

Launch
October 18, 2017

Webinar Event
November 2017

Submission Deadline
December 15, 2017

Winners Announced
January 31, 2018

Challenge Phase

Develop & Submit
Total Prize Pool TBD

Launch
February 2018

Webinar Event
May 2018

Submission Deadline
August 2018

Winners Announced
September 2018

Product Phase

Build & Scale
Total Prize Pool TBD

Post Challenge

Launch
September 2018

Project Progression
Through July 2019

Winners Announced
August 2019

Path to Commercialization
2019 - 2021