

Ohio Third Frontier Joint Meeting

December 17, 2015



Development
Services Agency



Third Frontier
Innovation Creating Opportunity

Inclusion and Diversity

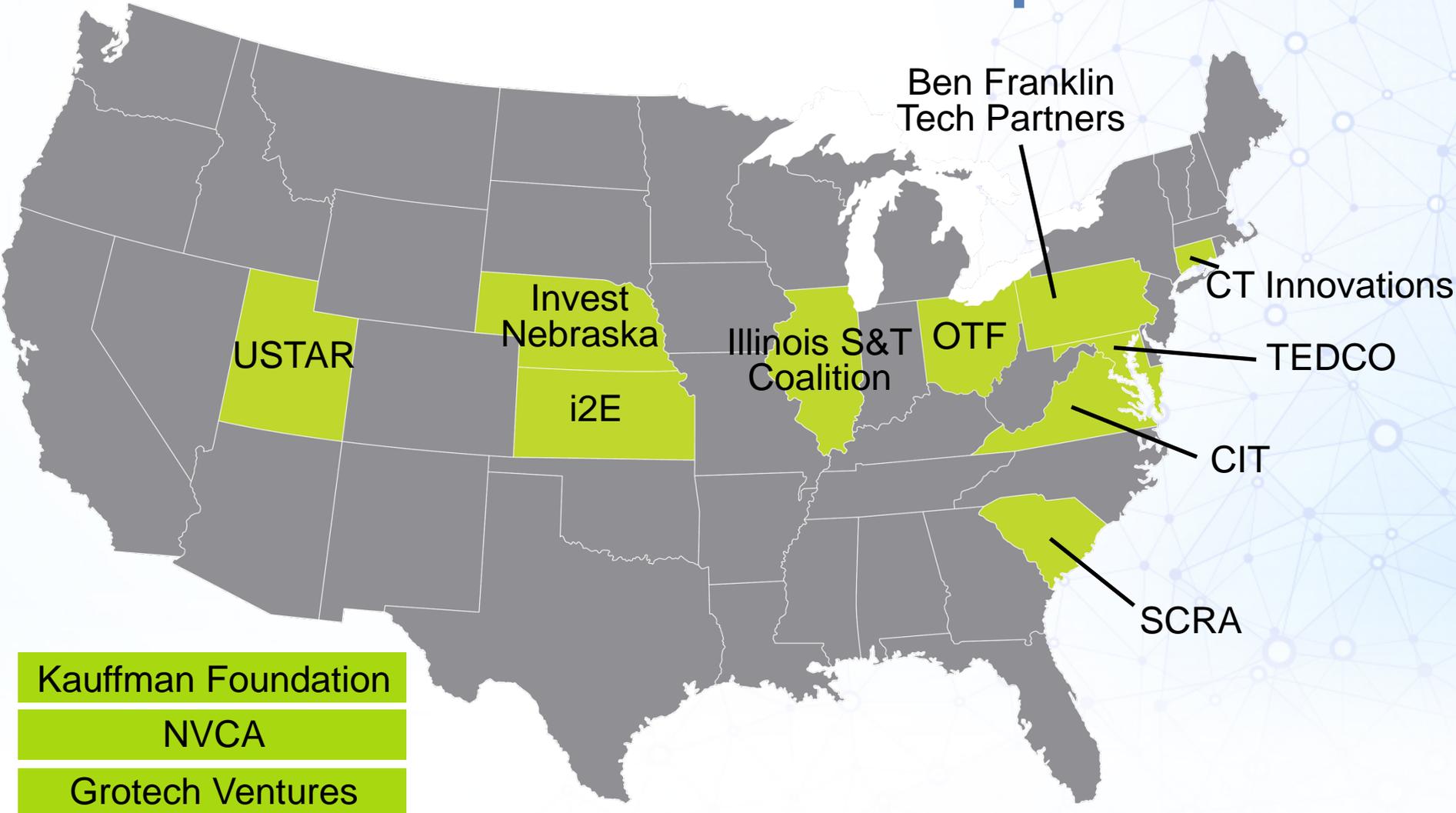
Panel Discussion

METRICS BENCHMARKING OTHER STATES

Metrics Benchmarking

- Executive Roundtable hosted by SRI
- Development of comparable performance metrics across states
- Sustainability of pre-seed funds, attraction of early stage investment
- Participants included state-affiliated Technology-Based Economic Development (TBED) programs and other interested third parties

Attendees and Participants



Takeaways

- OTF metrics very well received
- Willingness to explore common framework for reporting
- Approach and expectations for startup and early stage programs is largely consistent with other states

CY 2016 Program Plan

Consensus
Document

ICorps@Ohio.com

Increasing Output

“Increase Outcomes by 50%” Partner Response

General

- Achieve by leveraging existing infrastructure and programs
- Radical new initiatives not required

Principal focus areas

- Enhance the talent pool
- Connect the mentor networks
- Widen the capital net
- Accelerate inclusion-based investment

CY 2016 Program Plan

Status of Pre-Seed/Seed Plus

Investments since 2006: More than \$100,000

21 companies
\$11M invested

138 companies
\$61M invested

33 companies
\$13M invested

50 companies
\$24M invested

79 companies
\$41M invested

11 companies
\$5M invested

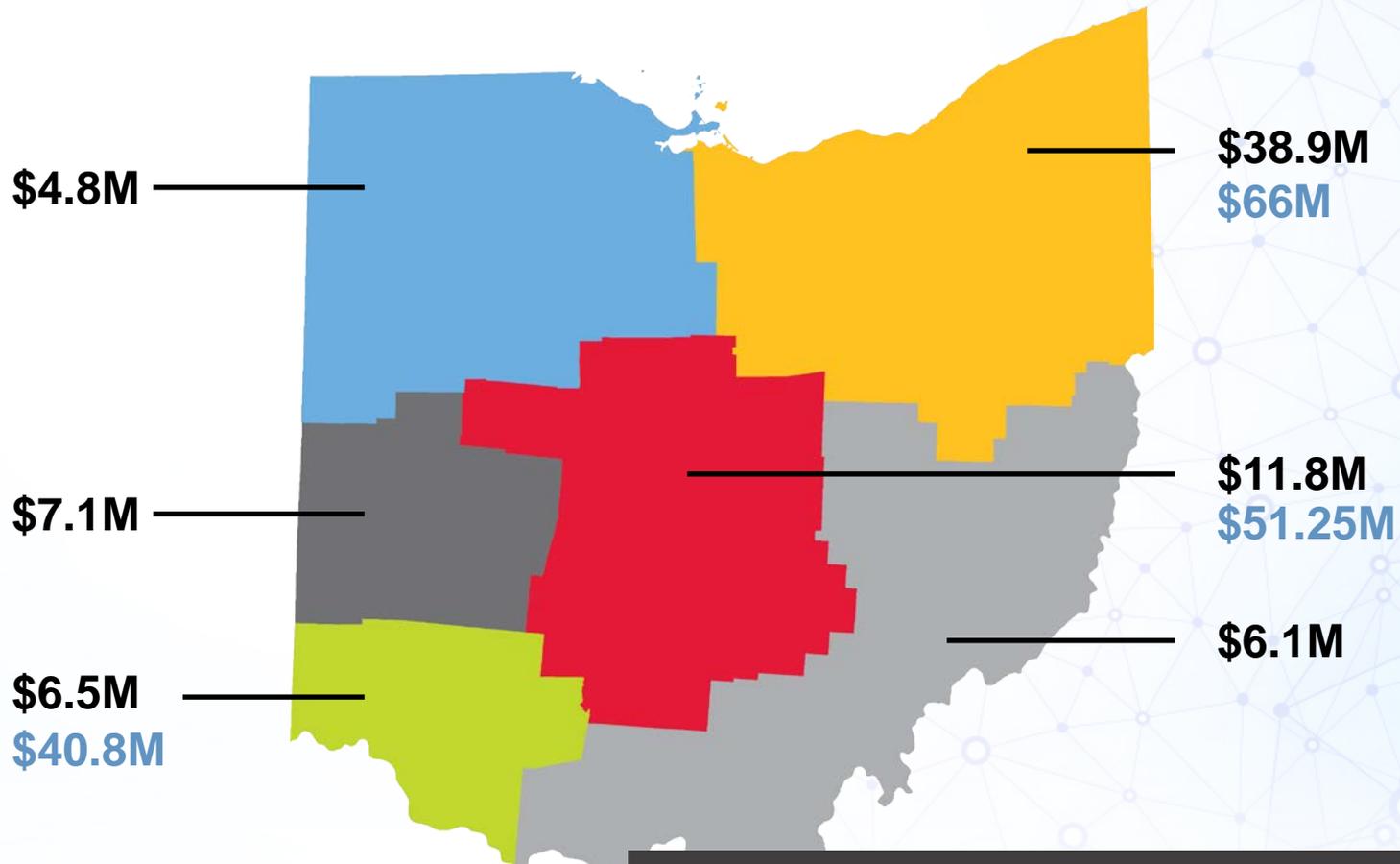
State Total
332 companies
\$155M investment

Current Pre-Seed Fund Organizations



**19 Funds
17 Organizations
Dry Powder \$75.4M**

Current Dry Powder and New Potential



\$75.4M + \$158.05M = \$233.45M

CY 2016 Program Plan

Program	CY 2015	CY2016
Entrepreneurial Signature Program (previously committed)	24	
Pre-seed Fund Capitalization Fund/Seed Plus	60	–
Increasing Output	*	*
Commercial Acceleration Loan Fund	7	25
Technology Validation & Start-up Fund	3	5
Third Frontier Internship Program	–	1
Total	70	31

* Placeholder for proposed ideas to increase output by 50% (Consensus Document)

Ohio Third Frontier Commission Meeting

December 17, 2015



Development
Services Agency



Third Frontier
Innovation Creating Opportunity

TECHNOLOGY VALIDATION AND START-UP FUND

Purpose

- Support Ohio institutions of higher education and other Ohio not-for-profit research institutions in doing a better job at licensing and monetizing their technological discoveries.
- Create economic growth in Ohio based on start-up companies that license and commercialize technologies developed by Ohio institutions of higher education, other Ohio not-for-profit research institutions and federal labs located in Ohio.

Lead Applicants/Phases

Phase 1

Grant to accelerate 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 2

Grant to support Ohio start-ups and young companies that are a prospective licensee of a technology from an Ohio institution. Up to \$100,000 as initial capitalization with no cost share (\$150,000 in areas of Medical Tech or Software Applications)

External Evaluator: YourEncore

TVSF Cycles

Tenth Cycle of the TVSF Program

To date, including this cycle:

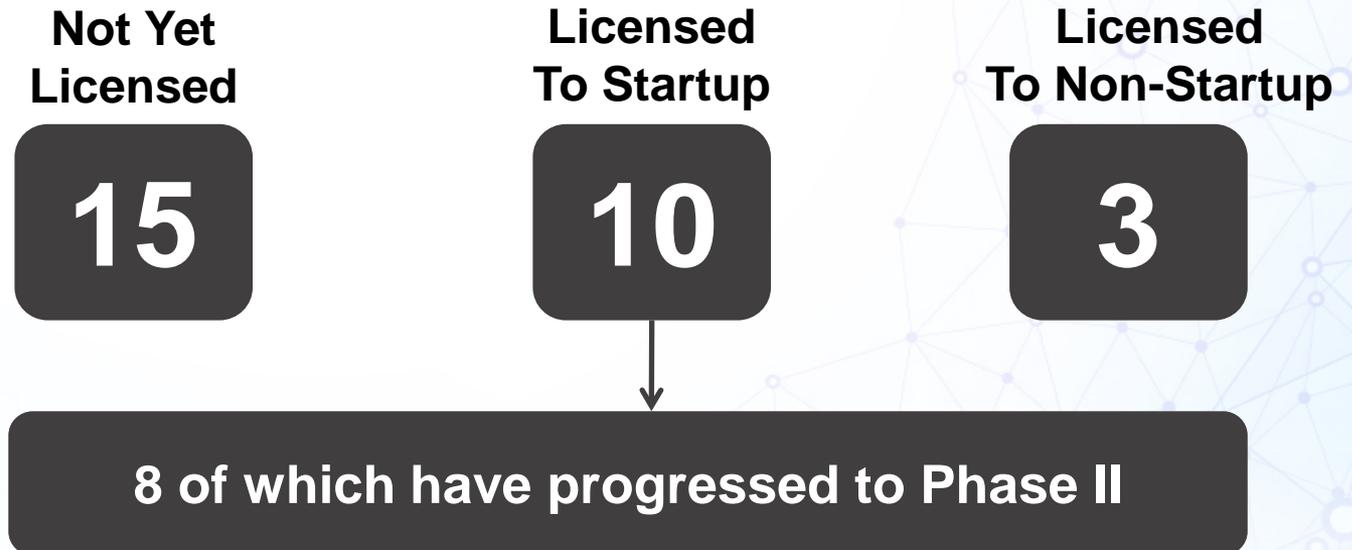
- Phase 1 proposals: 200 Phase 1 awards: 79
- Phase 2 proposals: 122 Phase 2 awards: 50

Current cycle

- 29 proposals with 11 recommended for award
- 8 proposals are re-submits, of which 3 are recommended

TVSF Phase 1 Progress

To date, **31** Phase 1's are complete:



TVSF Phase 2 Progress

To date, **17** Phase 2's are complete:

Trials/ R&D

6

**Pre Market
Entry**

6

**Market
Entry**

4

7 of which have gotten equity investments



Technology Validation and Start Up Fund

Round 10

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Overview

- 38% of grants submitted this round are recommended for approval (11 of 29). Total grant dollars recommended is \$925,000.

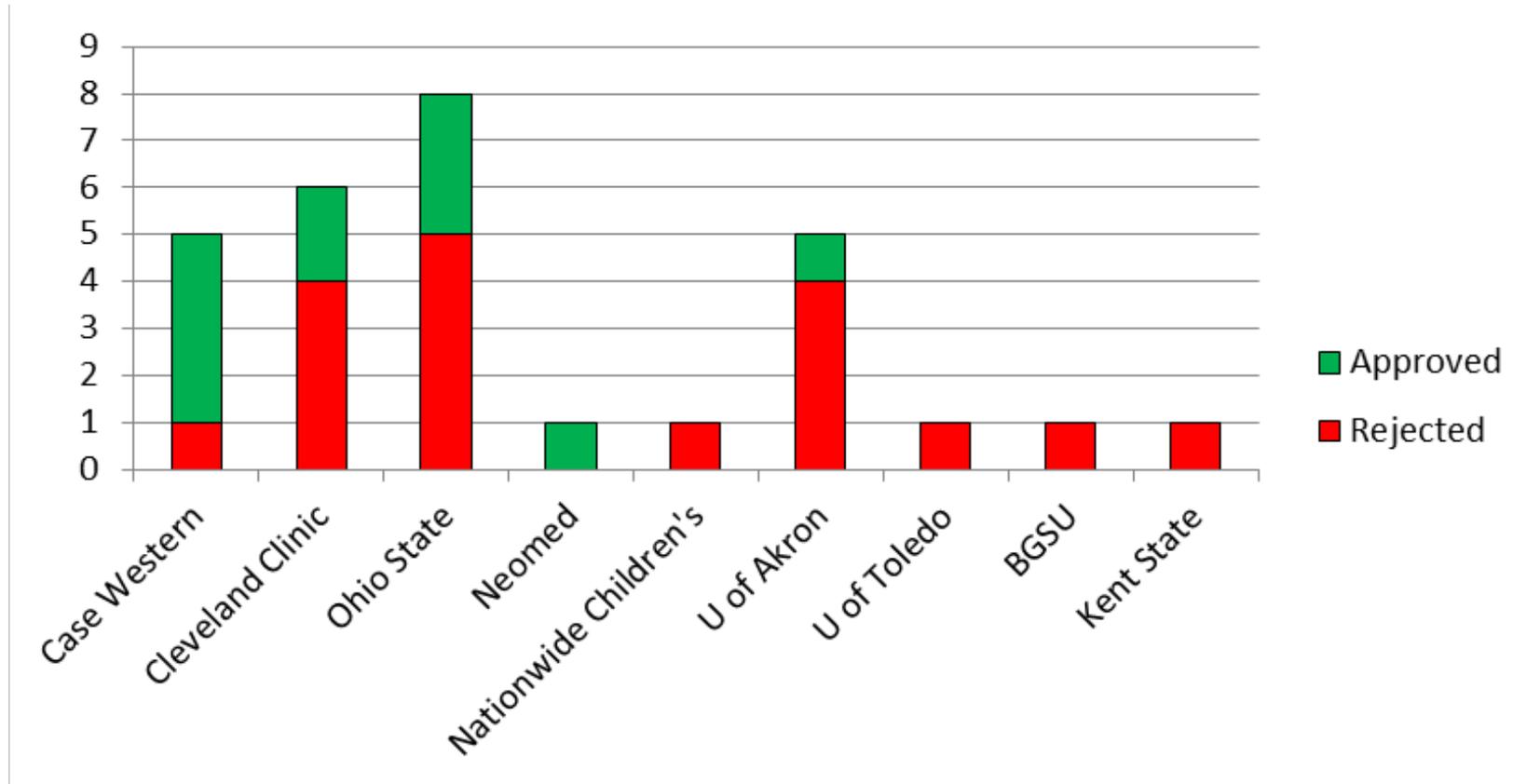
Round	Approval Rate	\$\$ Recommended
1	35%	\$950,000
2	52%	\$900,000
3	44%	\$610,000
4	30%	\$864,000
5*	46%	\$1,462,000
6	39%	\$998,000
7	57%	\$1,100,000
8	37%	\$710,000
9	31%	\$550,000
10	38%	\$925,000
Overall	41%	\$9,069,000
Average		\$906,900

- Continue to encourage potential resubmissions to take advantage of the opportunity to debrief.
 - It was evident that some benefited highly from the discussion, others declined advice given.*
 - Resubmission success rate was 38% overall.*

*Note 1: \$100K conditional award for 13-541 in round 5 was superseded by 14-524 in round 7 for the same amount.

Overview

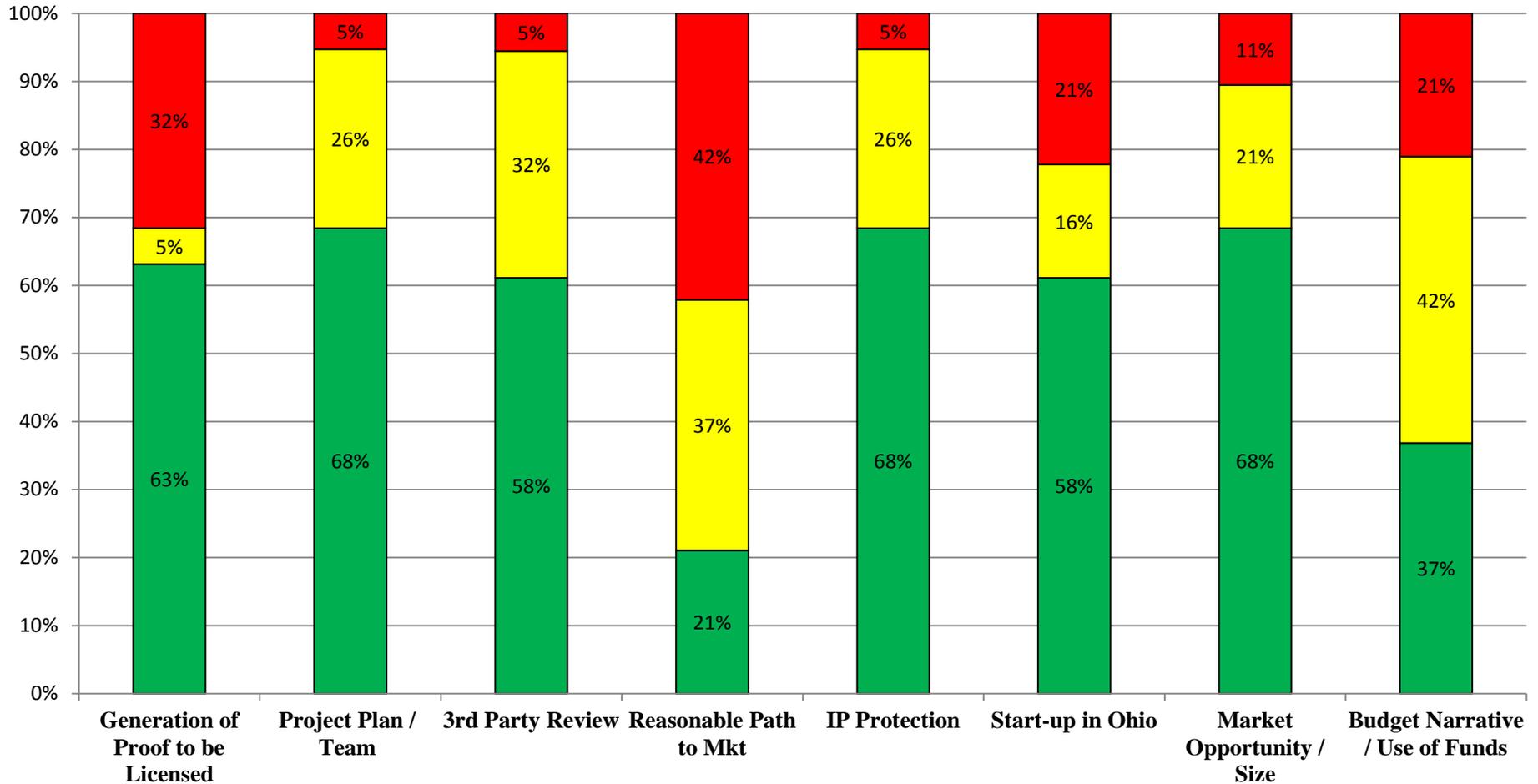
Round 10 Results: Applications by Institution



Trends

Round 10

Phase 1 Category Ratings



Phase 1 Proposals Recommended for Funding

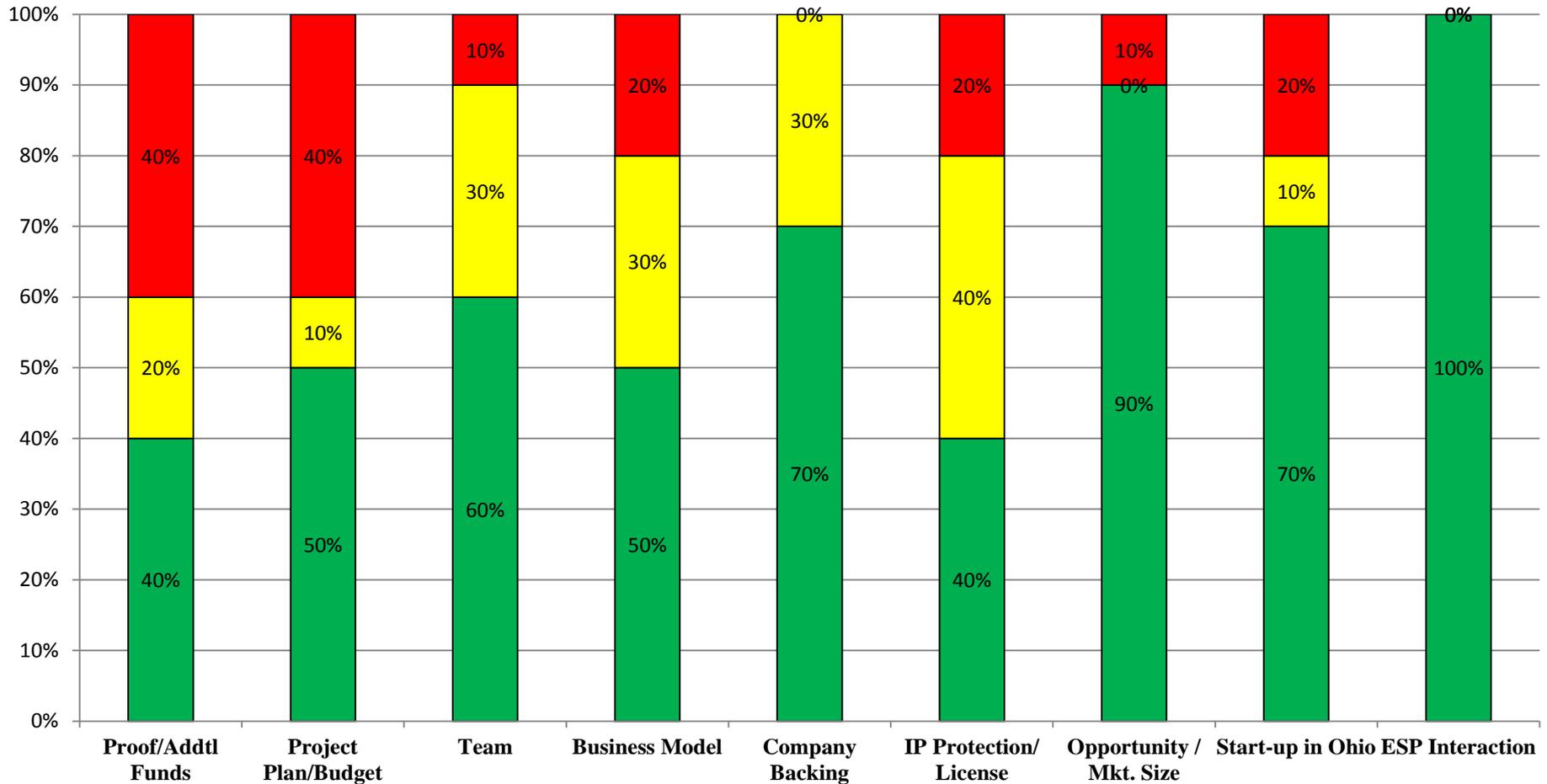
Round 10

Proposal #	Lead Applicant	Title	State Funds Requested	Total Budget	Recommend
16-117	Cleveland Clinic	Companion Diagnostic Platform for Optimization of Personalized Anticancer Therapy	\$49,960	\$99,920	\$49,960
16-120	Case Western Reserve University	HemeChip for Point-of-Care Diagnosis of Sickle Cell Disease in Newborns	\$50,000	\$100,000	\$50,000
16-122	Northeast Ohio Medical University	Development of a New Commercial Kit for Screening Cell Specific Gene Therapy Vector	\$50,000	\$100,000	\$50,000
16-123	Case Western Reserve University	Evaluation of Percutaneous Electrodes for Direct Current Nerve Block	\$50,000	\$100,000	\$50,000
16-124	Ohio State University	REZEN	\$50,000	\$100,000	\$50,000
16-125	Case Western Reserve University	SynthoPlate Technology: Evaluation and Validation	\$50,000	\$100,000	\$50,000
16-126	Case Western Reserve University	Low Cost, Self Powering Wireless Sensors and Sensor Networks for Enabling Energy-Efficient Smart Buildings	\$50,000	\$100,000	\$50,000

Trends

Round 10

Phase 2 Category Ratings



Phase 2 Proposals Recommended for Funding

Round 10

Proposal #	Licensing Institution	Lead Applicant	Proposal Title	State Funds Requested	Total Project Budget	Recommended	Capital Raised to Date	Time to Market	Additional Capital to Market
16-133	Cleveland Clinic	Infuseon Therapeutics	Commercialization of the Cleveland Multiport Catheter for Delivery of Therapeutics to the Brain	\$150,000	\$150,000	\$150,000	\$600,000	0.7 yrs	\$150,000
16-137	Ohio State University	SpineDynx	SpineDynx - Spine Research Institute - Clinical Lumbar Monitor	\$150,000	\$150,000	\$150,000	\$1MM	1 yr	\$150,000
16-138	Ohio State University	MatchTx	MatchTx: Cancer Treatment Matching Software for Clinical Trials and Research	\$125,000	\$250,000	\$125,000	\$0	1 yr	\$250,000
16-139	University of Akron	O2 RegenTech	OXAID	\$150,000	\$150,000	\$150,000	\$77,500	2 yrs	\$1MM

Resubmission and Carry Through

Round 10

■ Resubmission

– Phase 1

- Four of Nineteen (21%) Phase 1 proposals are resubmissions
- One of those four (25%) is Recommended for Funding

– Phase 2

- Four of Ten (40%) Phase 2 proposals are resubmissions
- Two of four (50%) are Recommended for Funding

■ Carry Through

– *One of ten (10%) Phase 2 proposals were previous Phase 1 awardees*

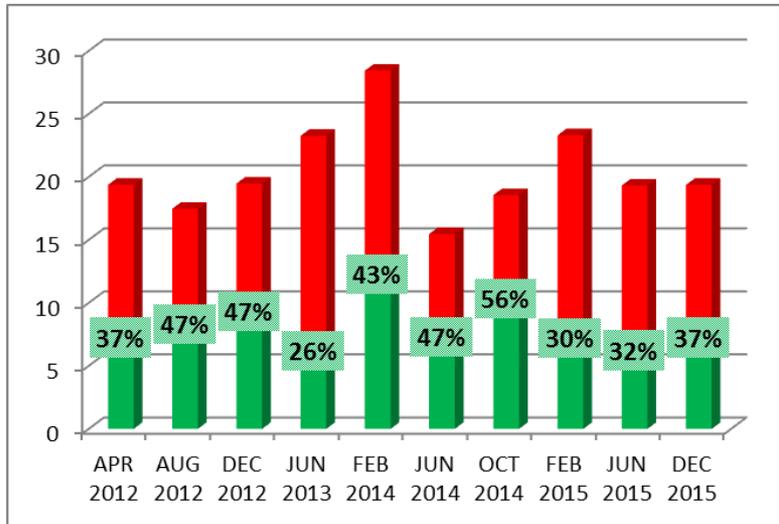
- It is Recommended (100%) for Funding in this round.

Trends

Comparative Results (all rounds to date)

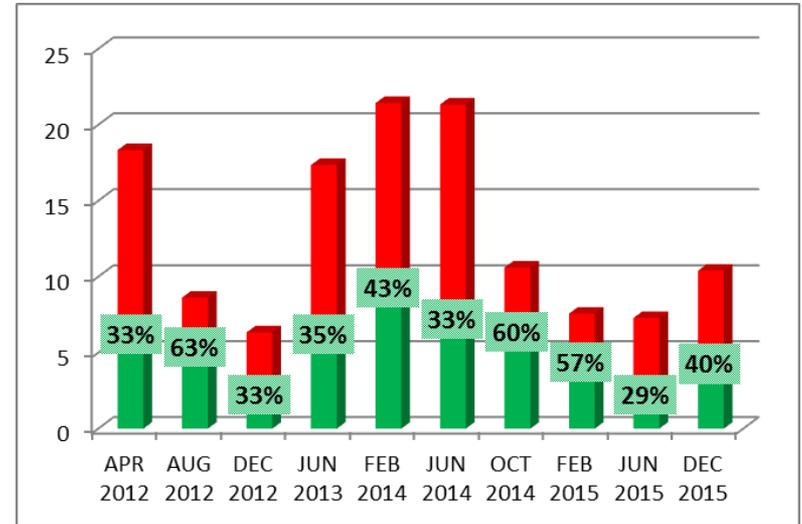
Rounds 1 – 10 Results

Phase 1 Applications



41% Cumulative Approval

Phase 2 Applications

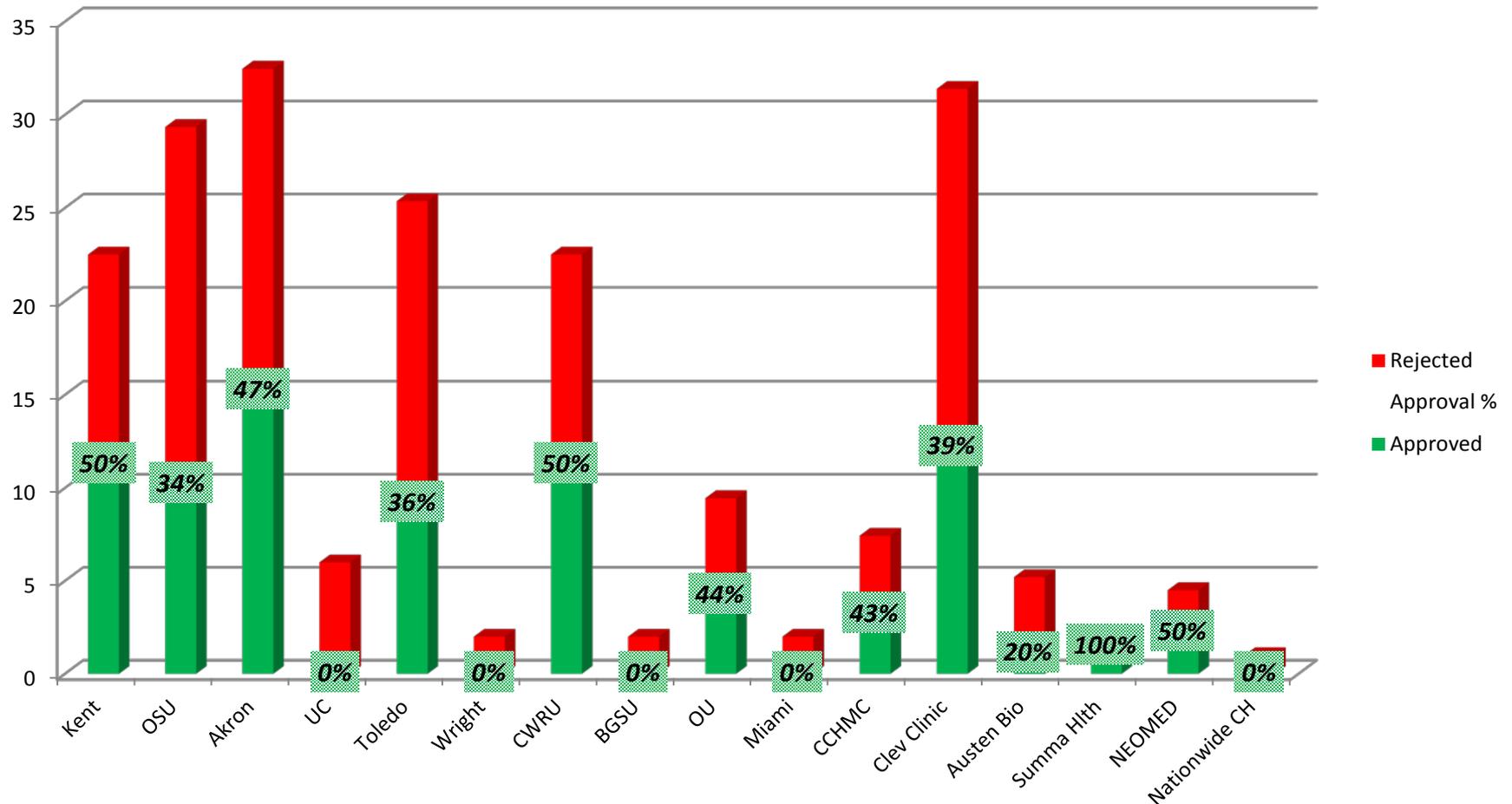


43% Cumulative Approval

Trends

Cumulative Results – Phase 1 (all rounds to date)

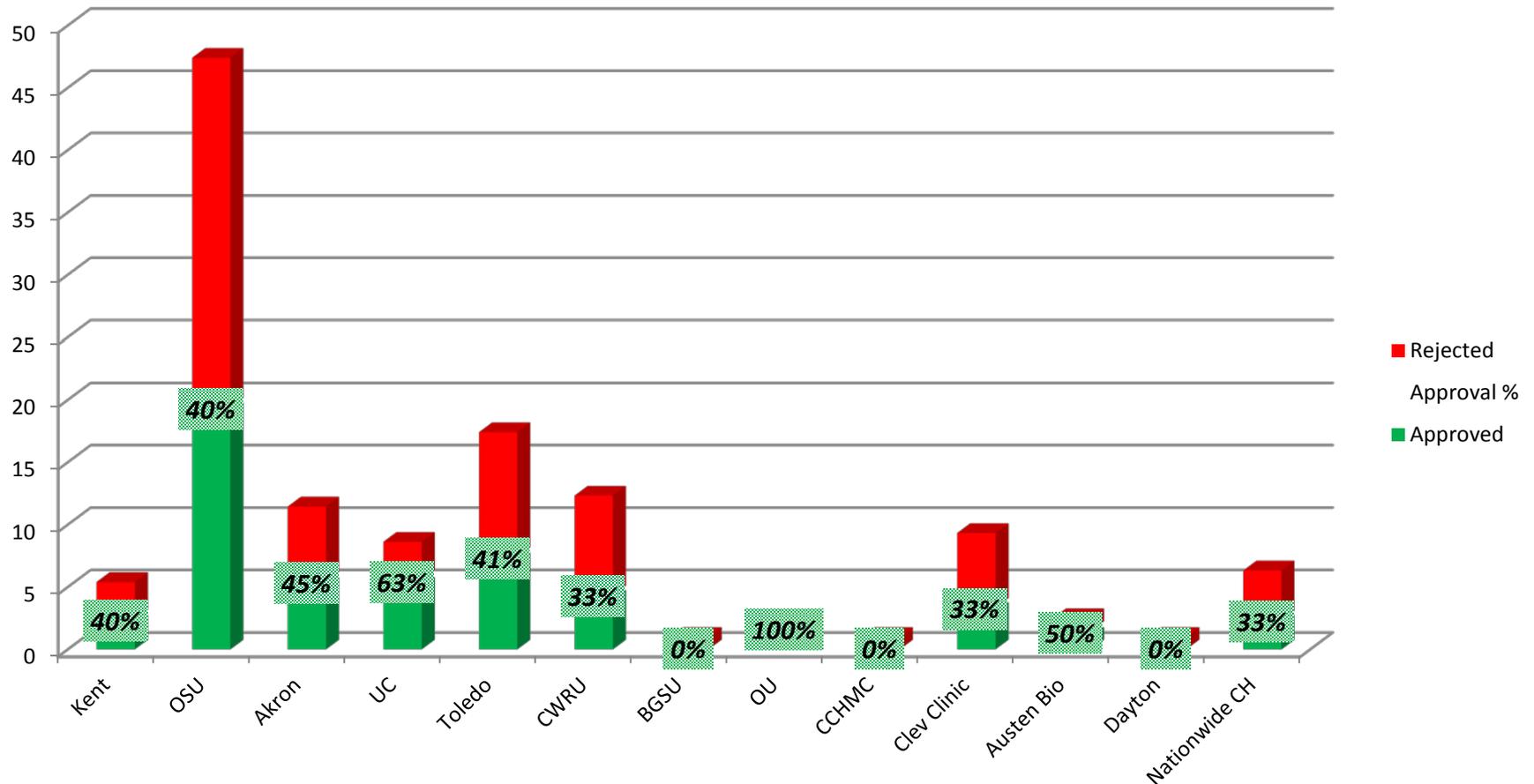
Phase 1 Approved /Rejected by Institution



Trends

Cumulative Results – Phase 2 (all rounds to date)

Phase 2 Approved/Rejected by Institution



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INDUSTRIAL RESEARCH AND DEVELOPMENT CENTER PROGRAM

Industrial Research and Development Center Program

- Attract large R&D centers to Ohio that have national designations.
- Support centers that:
 - conduct value-added applied R&D at direction of/in collaboration w/ Ohio industry,
 - perform industry-directed or industry-oriented problem solving, or
 - develop technologies that are commercializable with an Ohio for-profit company.
- Increase the reputation/visibility of Ohio R&D in targeted technologies.
- Attract senior research/entrepreneurial talent.
- Create jobs.
- Awards up to 15% of primary sponsor funding, not to exceed \$5 million.

National Network for Manufacturing Innovation

- National Additive Manufacturing Innovation Institute (America Makes), Youngstown, Ohio: \$30 Million
- Next Generation Power Electronics Innovation Institute, North Carolina State University: \$70 Million
- Digital Manufacturing and Design Innovation Institute, Chicago: \$70 Million
- Lightweight and Modern Metals Manufacturing Innovation Institute, Detroit (led by Edison Welding Institute of Columbus, Ohio): \$70 Million

University of Dayton Research Institute (IRDCP) – Institute for Advanced Composites Manufacturing Innovation (IACMI)

Federal Sponsor
Department of Energy

US DOE Award
\$70M

Key Difference
Where other IRDCP awards for NNMI were led or significantly focused around Ohio-based institutions, the IACMI project is primarily driven by other states (TN is the lead).

Ohio's Expected Share
\$10M

IRDCP Recommended
\$1.5M

Job Commitment
140 Ohio-based jobs

Compressed Gas Storage and Manufacturing Technology Center (CGSMTC)

Purpose of the Center

- CGSMTC is one part of the Institute for Advanced Composites Manufacturing Innovation (IACMI) led by the University of Tennessee, Knoxville. The Ohio-based CGSMTC will lead the initiative for the development of affordable composite compressed-gas fuel tanks for the automotive and trucking industries.
- UDRI proposes to use the \$10 million award for operational expenses. UDRI requests \$1.5 million from the OTF IRDCP to be used toward the purchase of capital equipment. These machines will be installed at 2000 Composites Drive, Kettering Ohio. UDRI has other large capital equipment located at the same facility and plans to use the facility for at least 15 years.

Compressed Gas Storage and Manufacturing Technology Center (CGSMTC)

Commitment Recommendation

IRDPC award to URDRI of \$1,500,000 conditioned on:

- \$70M US DOE grant (a minimum of \$10M of which must remain in Ohio, 15% of which equates to the IRDPC grant amount)
- Impacts of the creation of 140 new, full-time Ohio jobs during the project period

PRE-SEED FUND CAPITALIZATION PROGRAM/SEED PLUS

Current Pre-Seed Fund Organizations



**19 Funds
17 Organizations
Dry Powder \$75.4M**

CY 2015 Pre-Seed Fund Investments

19 First-time investments

16 Software Applications for Business and Healthcare

2 Medical Technology

1 Other

Capital
deployed into
first-time
investments
\$5.7M

Average
\$300,000

Total capital
deployed in
2015
\$15.1M

Total dry
powder
\$75.4M

2015 Pre-Seed/Seed Plus Fund 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

2015 Pre-Seed/Seed Plus Fund Program Eligibility and Funding

RFP released June 2015

Lead Applicants:

- Pre-Seed: New and/or existing OTF Pre-Seed Funds
- Seed Plus: Must have an active OTF Pre-Seed Fund
- Must be based in Ohio or with a Principal Place of Business in Ohio.

Funding: Anticipated up to \$60 million

- Pre-Seed Funds:
 - Proposals for state funding in the range of \$500,000 to \$5 million
 - \$1 of cost share required for every \$1 of OTF funds
 - Total Fund size of \$1 million to \$10 million
- Seed Plus Funds:
 - Proposals for state funding in the range of \$2.5 million to \$5 million
 - \$3 of cost share required for every \$1 of OTF funds
 - Total Fund size of \$10 million to \$20 million
- Funding will be in the form of a loan

2015 Pre-Seed/Seed Plus Fund Program

20 proposals received

- 12 from existing OTF funds
- 8 from new funds

15 proposals advanced to Stage 2

- 9 Pre-Seed only, requesting \$29.979M
- 1 Seed Plus only, requesting \$2.5M
- 5 Combined funds, requesting \$41.625M
 - \$21,250,000 Pre-Seed
 - \$20,375,000 Seed Plus

External Evaluator: Urban Venture Group

**Total state funds
requested
\$74.104M**

**Total cost share
\$120.604M**

**Total funds
\$194.708M**

Rank	Control Number	Applicant/Fund	Pre-Seed Request	Pre-Seed Cost Share	Seed Plus Request	Seed Plus Cost Share	State Funding Request	Total Cost Share	Total Fund Size	Cumulative State Funding
1	15-116	JumpStart Evergreen Fund	\$5.00	\$5.00	-	-	\$5.00	\$5.00	\$10.00	\$5.00
2	15-111	CincyTech Fund IV	\$5.00	\$5.00	\$5.00	\$15.75	\$10.00	\$20.75	\$30.75	\$15.00
3	15-117	JumpStart Tech Inclusion Fund	\$5.00	\$5.00	-	-	\$5.00	\$5.00	\$10.00	\$20.00
4	15-104	Rev1 Fund	\$5.00	\$5.00	\$3.00	\$9.00	\$8.00	\$14.00	\$22.00	\$28.00
5	15-115	JumpStart NEXT Fund	-	-	\$2.50	\$7.50	\$2.50	\$7.50	\$10.00	\$30.50
6	15-114	Cleveland Clinic Ohio Bio Validation Fund VII Plus	\$5.00	\$5.00	\$5.00	\$15.00	\$10.00	\$20.00	\$30.00	\$40.50
7	15-106	OTAF Fund V/Rev1 Angel Fund	\$2.50	\$2.50	-	-	\$2.50	\$2.50	\$5.00	\$43.00
8	15-105	Rev1 Life Sciences Fund	\$2.75	\$2.75	-	-	\$2.75	\$2.75	\$5.50	\$45.75
9	15-102	Launch Den Capital Fund	\$3.00	\$3.00	-	-	\$3.00	\$3.00	\$6.00	\$48.75
10	15-101	Queen City Angels First Fund V	\$5.00	\$5.00	-	-	\$5.00	\$5.00	\$10.00	\$53.75
11	15-109	NCT Ventures Project #3	\$5.00	\$5.00	\$5.00	\$15.00	\$10.00	\$20.00	\$30.00	\$63.75
12	15-123	Mutual Capital Partners Fund III	\$2.079	\$2.079	-	-	\$2.079	\$2.079	\$4.158	\$65.829
13	15-110	Valley Growth Ventures	\$3.00	\$3.00	-	-	\$3.00	\$3.00	\$6.00	\$68.829
14	15-112	North Coast Angels Fund IIIb	\$1.65	\$1.65	-	-	\$1.65	\$1.65	\$3.30	\$70.479
15	15-113	North Coast Venture Fund	\$1.25	\$1.25	\$2.375	\$7.125	\$3.625	\$8.375	\$12.00	\$74.104
Applicants not advancing to Stage 2										
16	15-119	Akron Bioinvestments Fund II	\$1.75	\$1.75	-	-	\$1.75	\$1.75	\$3.50	\$75.854
17	15-108	OneCommunity Broadband Innovation Fund	\$0.60	\$0.60	-	-	\$0.60	\$0.60	\$1.20	\$76.454
18	15-118	IKOVE Startup Nursery Fund	\$2.50	\$2.50	-	-	\$2.50	\$2.50	\$5.00	\$78.954
19	15-125	Northeast Ohio Student Venture Fund	\$0.50	\$0.50	-	-	\$0.50	\$0.50	\$1.00	\$79.454
20	15-126	OCEAN Capital Fund II	\$0.50	\$0.50	-	-	\$0.50	\$0.50	\$1.00	\$79.954

Cumulative state
Funding of \$60M