



NOAA-Insurance Industry Partnership: Introduction to the NSF/IUCRC


February 17, 2023

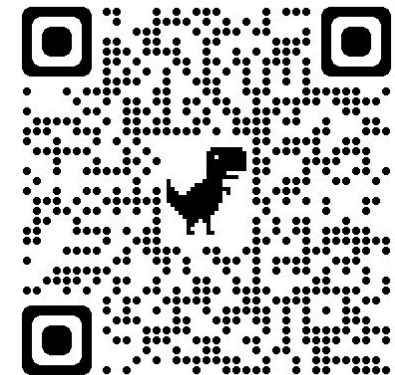
Educational Dialogue Agenda

Introduction	Ellen Mecray, NESDIS/National Centers for Environmental Information, and Sarah Kapnick, NOAA Chief Scientist
NSF/IUCRC Opportunity	Barbara Ransom, NSF/IUCRC Program Manager
Audience Questions and Dialogue	Ellen Mecray, NESDIS/National Centers for Environmental Information



Housekeeping Review

- Use the GoToWebinar Questions Box to submit questions or feedback for presenters. 
- This event will be recorded and made available online along with the presentation (see QR code below for website).
- Poll questions will appear on your screen, please respond as you are able.
- Additional dialog questions will be at the end of the session, participate using the chat feature.



Exit





POLL

QUESTIONS





National Science Foundation
and



National Oceanic and Atmospheric Administration

***INTRO TO THE NSF INDUSTRY-UNIVERSITY
COOPERATIVE RESEARCH CENTER (IUCRC) PROGRAM***

**Vehicle to Collaboratively Engage Universities and Industry
Climate Prediction and Catastrophe Modeling**

Feb 17, 2023

Barbara Ransom: NSF/GEO IUCRC Program Director

Ellen Mecray: NOAA

Mission: NSF



“To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense...”

Photo Credit: Maria Barnes, NSF

Mission: NOAA

“To understand and predict changes in climate, weather, oceans, and coasts; to share knowledge and information with others;...”



NSF: Driving Toward Societal Impact

NSF's Vision – Creating a Nation that is the global leader in research and innovation



\$8.5B

**Basic
Research**



**Investment in Technology,
Innovation, and
Partnerships**

~\$800M

Translational Research



**Moving research
innovation toward
commercialization**

NSF: A Catalyst for Partnerships

Industry

Academia

National Labs

Foundations

States

International

Other Federal Agencies

Professional Societies



IUCRC – A Collaborative Partnership



Government

NSF catalyzes partnership; other agencies join as Members or co-fund the Center



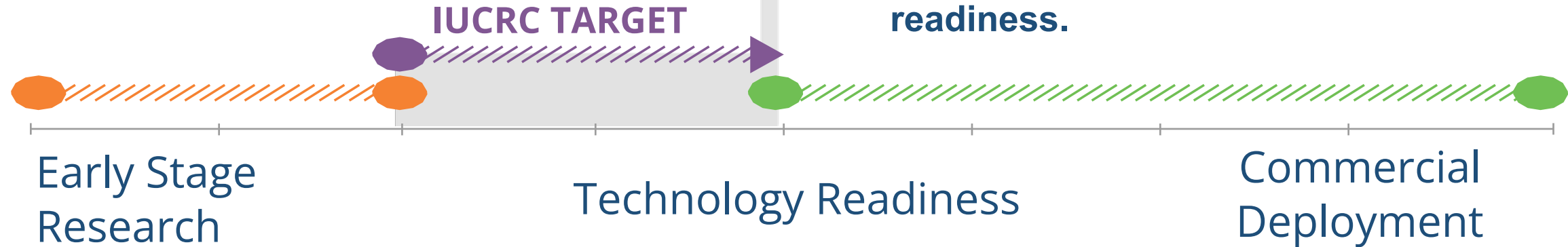
Universities

Provide research infrastructure, human capital, and technical expertise.



Industry

Members provide funds for research and insight into needs of the economic sector.



IUCRCs bridge the gap between academic curiosity-driven research and commercial readiness.

NSF IUCRCs – Portfolio Snapshot and Facts

84
Active Centers

400+
Large Firms

300+
Small Firms

110+
Universities

20+
Government Entities



In 2021: **\$47M** in non-NSF funds generated to support Center research.

~1/4 of graduating IUCRC-involved students hired by Center members.

Sampling of Participating IUCRC Members



IUCRC - Value Proposition for Members

IUCRC

Member ROI:

Each member dollar leverages
~23 additional dollars



Access to Talent

Able to scout and Mentor student talent with skills for work in Industry.



Reduce R&D Risk

R&D risk for developing early-stage disruptive tech shared with others.



Research Cost Avoidance

Low human capital cost.
Access to facilities.
Save on internal research money.



R&D Leverage

High ROI due to joint project funding model



Network Access

Collaborative venue for Interaction with other Members, competitors, regulators



Access to IP

Royalty-free, non-Exclusive licenses on IP produced in the Center.

IUCRC – Value Proposition for Universities

Student Training & Workforce

6,500*

Center-trained students nationwide

25%*

Center-trained students hired by member organizations

*(10-year data)



Student Support

Enhance resources for student training, skill development & job placement



Funding.

Increase & diversify research funding via industry-driven research.



Collaboration

Build relationships, develop industry partnerships for tech transfer.



Broad Impact

Work with industry to address societal Challenges.



Feedback

Get industry guidance on research problems.



Access

Access to industry information to Spur innovation.

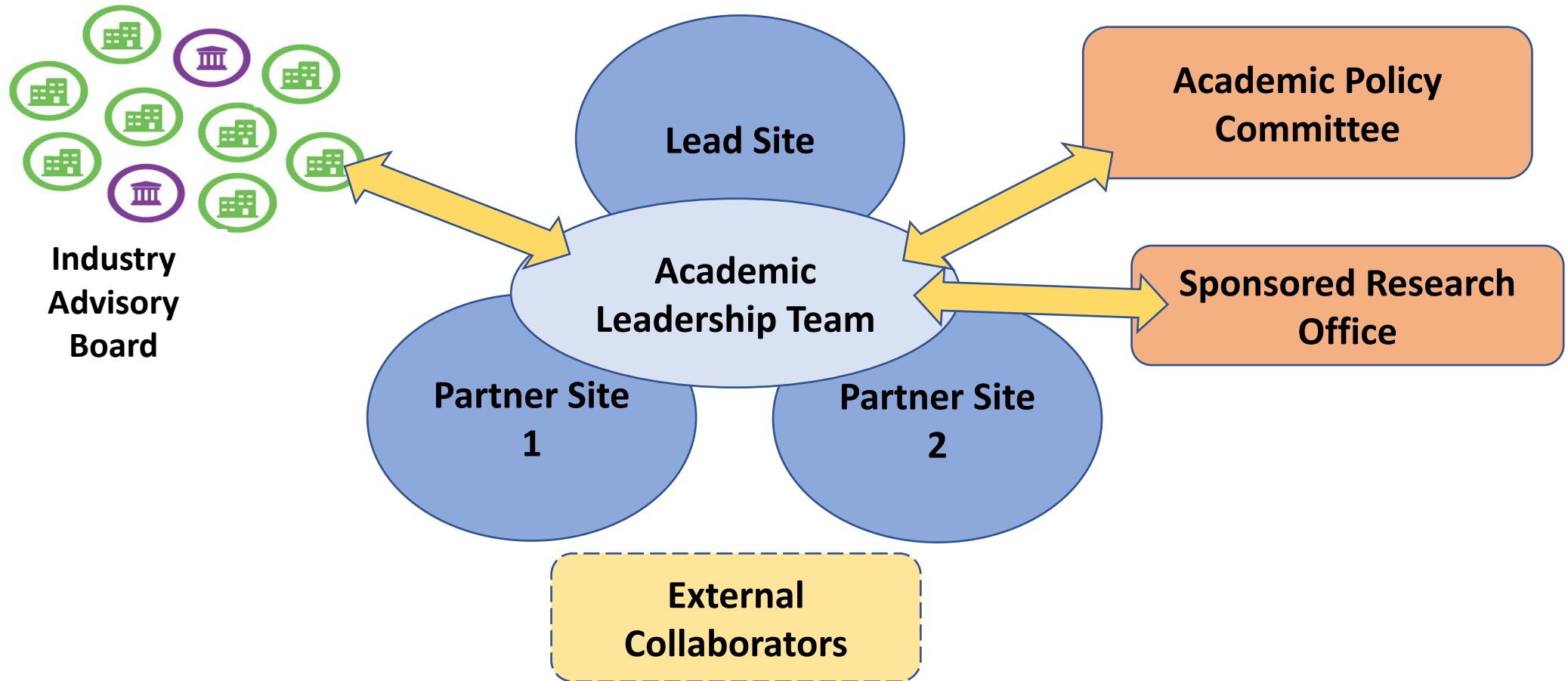


IUCRC Center Structure and Operations

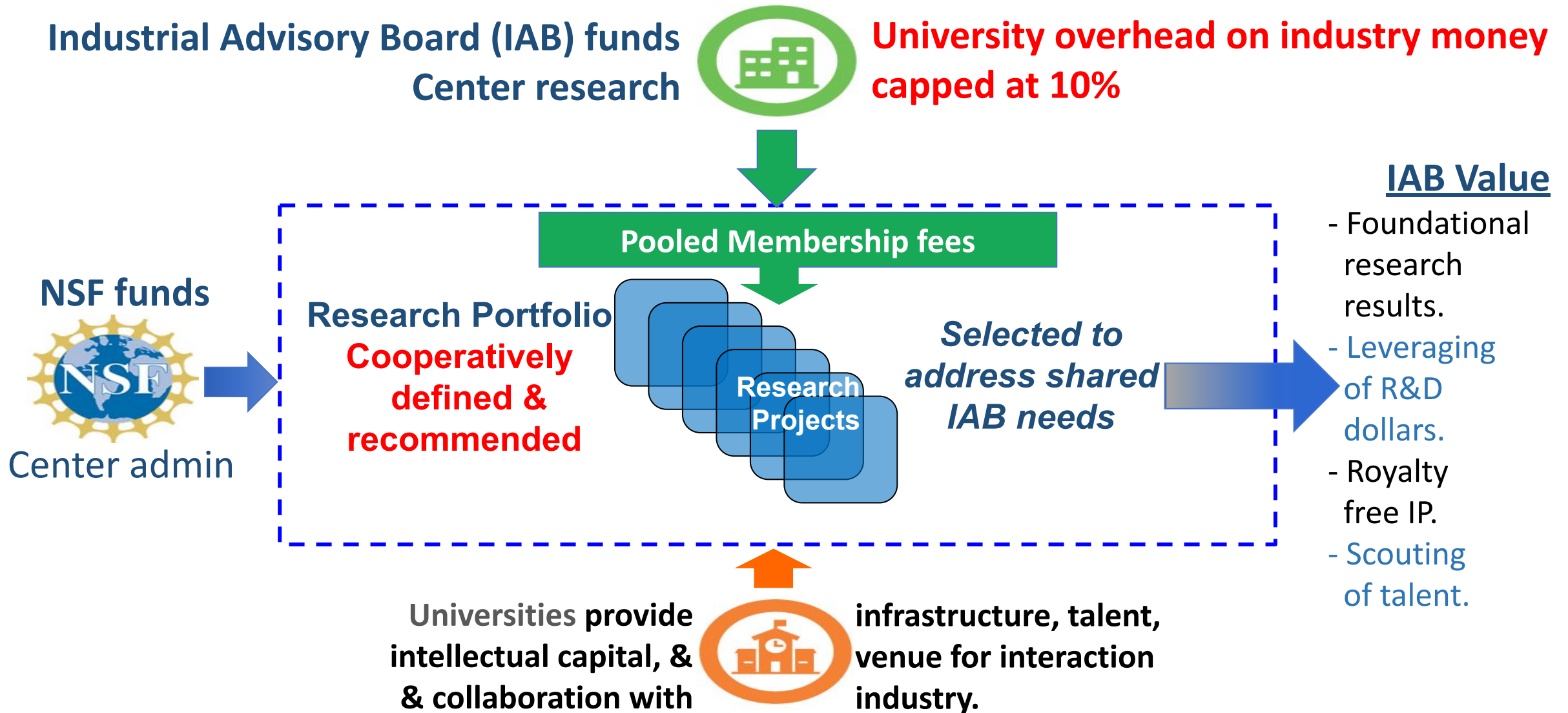
IUCRC – Center Structure



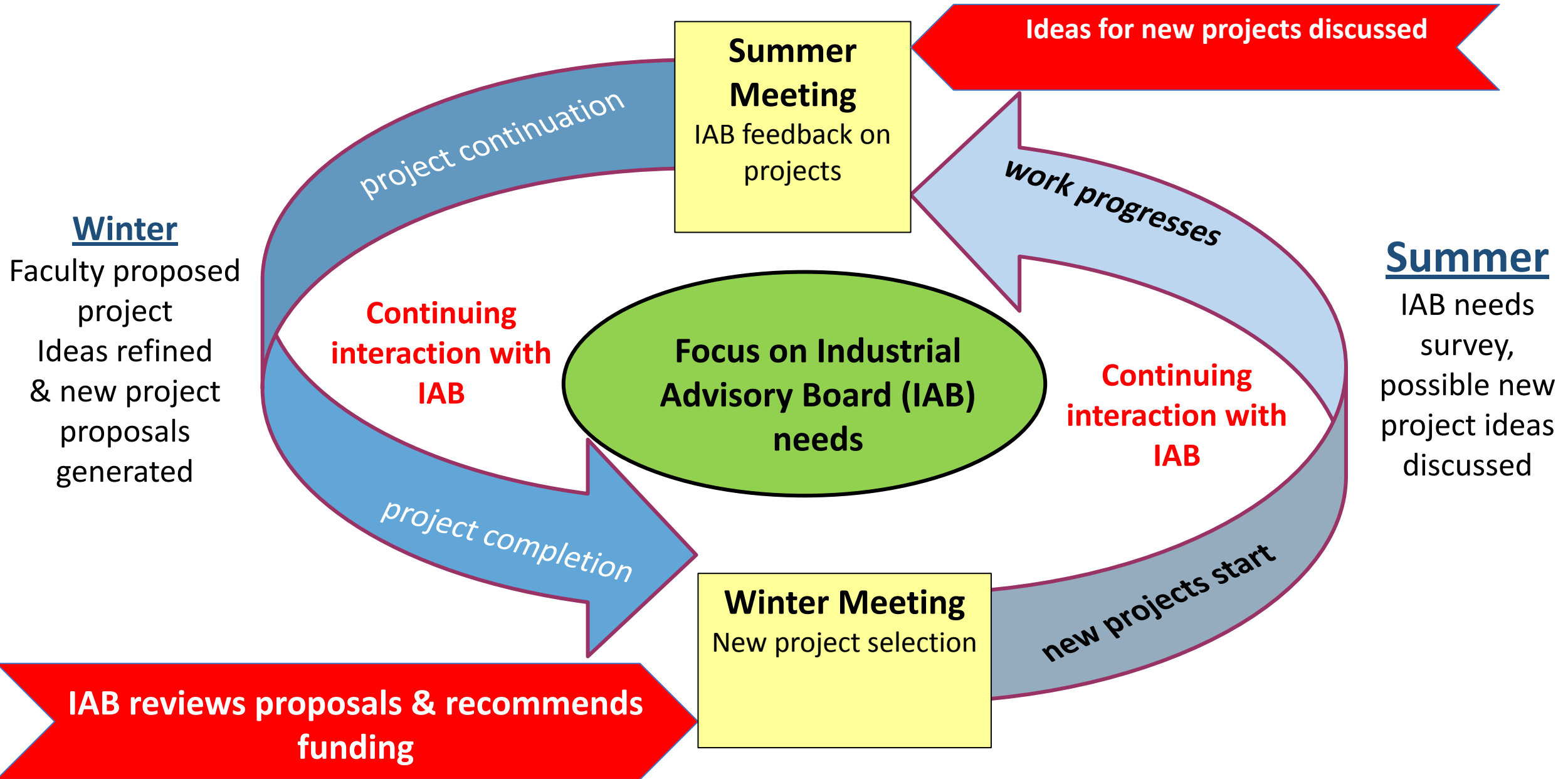
IUCRC



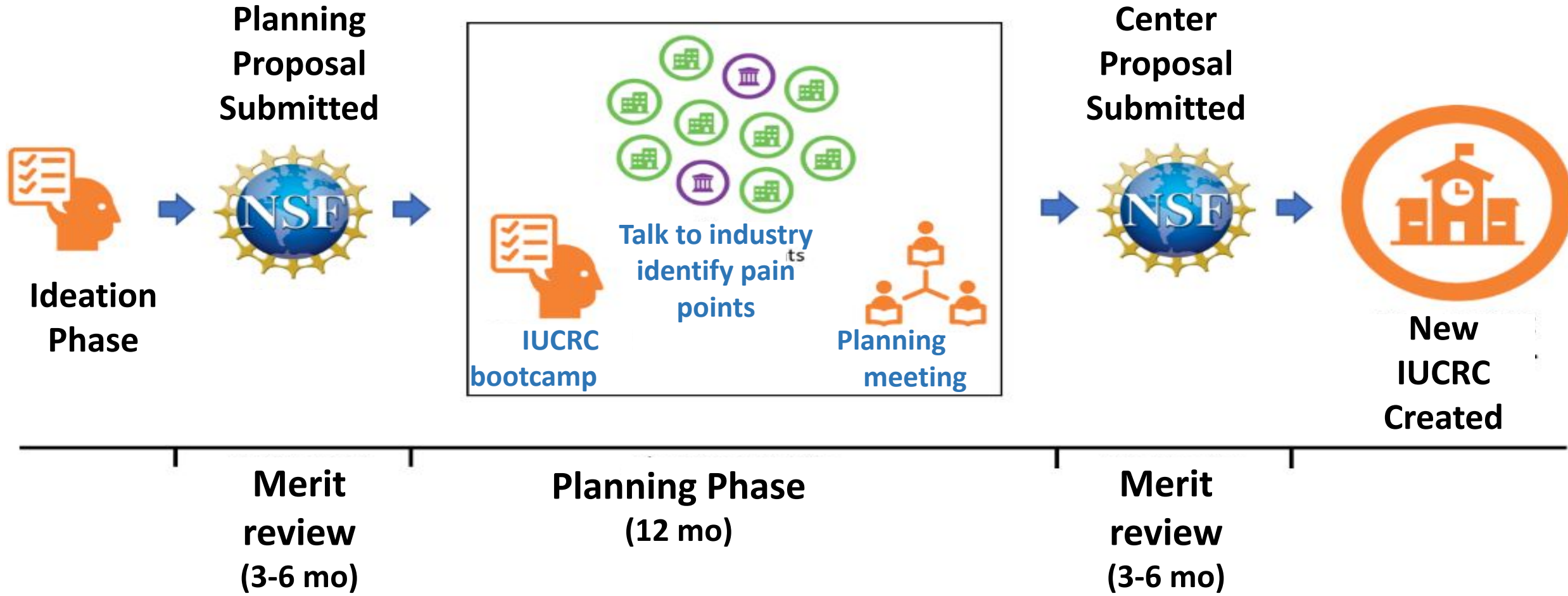
IUCRC – Program Operational Essentials



IUCRC - Member Role in Project Selection



IUCRC Center Creation Path and Timeline





IUCRC Characteristics and Must-Haves

Key for a Successful Partnership & Center

IUCRC: Main Objectives

- Convergence between academia & industry on cutting edge research thrusts of high priority that directly address the collective pain points of a targeted sector of the economy.
- Strong industry interest and commitment to being a dues paying member of the Center and working with other members of the sector and involved faculty to overcome hurdles holding the sector back.
- Deeper understanding of industry pain points and areas of knowledge creation needed by a sector of the economy so it can create better and more effective and products and services to serve society.



Center, Center Members, and Member Eligibility

IUCRC Sites: The Lead Site is the administrative head of the Center, collects industry money, and distributes it to recommended projects. Sites generally consist of from 7 to 15 faculty, many times interdisciplinary, to enable complex problem solving focused on the needs of the targeted sector. Faculty from Institutions where there are insufficient faculty for a Site can still participate in a Center as “affiliated faculty”.

IUCRC Goal: To advance a technology or targeted sector of the economy, employing cutting-edge research ideas & technology

Membership Eligibility* - Any entity can join, if they sign the IUCRC Membership agreement and are not forbidden by law.

- Private sector companies (large, small, startups, international).
- Government agencies & public sector entities (federal, state, local).
- National labs, FFRDCs.
- Non-profits, foundations.

IUCRC – Controlling Documents

- **Membership Agreement**

- Same for all.
- Must be signed prior to becoming a Center member.
- Identifies types of memberships and fee structure.
- Codifies rights for Center derived IP.
 - University owns IP.
 - All Members have royalty free licensing rights
 - Possibility of exclusive rights (if no other Member interested)



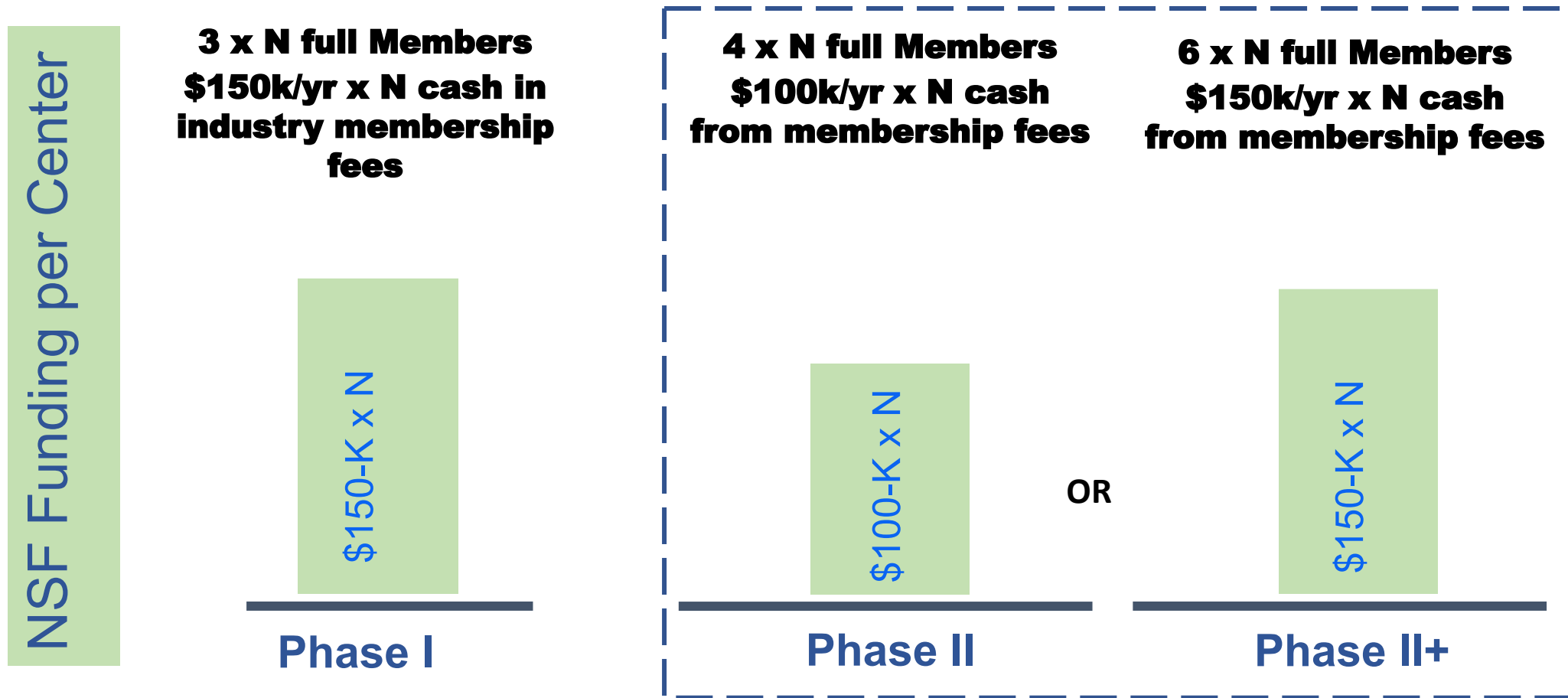
Signed by 100's of
firms involved in
IUCRCs

- **Center Bylaws**

- Defines how Center will operate.
- Describes research project consideration and voting practices.
- Sets faculty/student Center research publication policies/delays.
- Written jointly by university and IAB, can be amended as needed.
- NSF approval required - ensures adherence to IUCRC model.

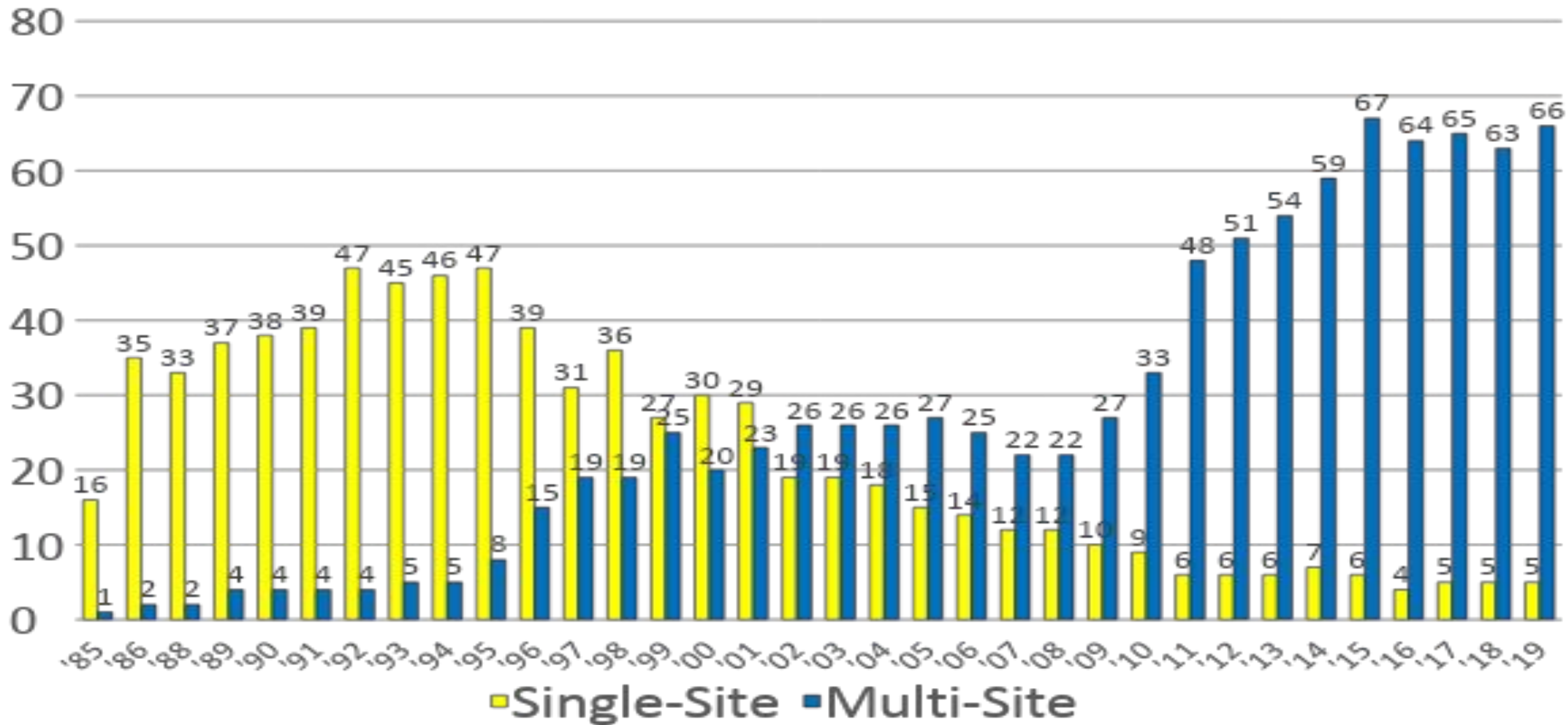
Phase IUCRC Minimum Funding Requirements

IUCRC Funding Model (N = Number of Sites)



IUCRC Portfolio over Time

Evolution from Single to multi-Site IUCRCs



What an IUCRC Is and What It Is Not

- IUCRCs are engines of innovation to help Members overcome the collective conceptual and technological hurdles of the sector through fundamental use-inspired research projects focused on industry needs. **IUCRCs are NOT contract or service organizations: no one-on-one or hand-in-hand projects allowed.**
- IUCRC research is to provide ground-breaking research results of mutual interest where faculty learn industry pain points and pitch projects to address them with Members recommending funding for those of highest priority. **IUCRCs are not for faculty simply wanting to augment their funding, motivation should be for understanding and the collective needs of the sector.**
- IUCRCs provide companies opportunities for serious talent scouting, to find students who are creative, resourceful, and understand industry needs and how to communicate and effectively in a private sector-like environment. **IUCRCs are not simply research engines, they can provide access to talent, infrastructure, research capacity, etc. missing from your organization.**



Questions?

Barbara Ransom, PhD: bransom@nsf.gov

*For more information see
NSF IUCRC solicitation 20-570*

POLL QUESTIONS



Dialogue

