Expediting the Shift Toward Strategic Research Development

Eight Tactics to Increase Competitiveness for Large and Complex Federal Opportunities

University Research Forum

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No Such Thing as Bad Press

TAMU's "Station Domination" Designed to Increase Funding Success Rate

The Washington Post

A little bit of Aggieland has taken over Metro Center this month

October 25, 2016

"Mary Billingsley noticed something odd as she walked into Metro Center subway station earlier this month. There was an ad for Texas A&M University. And another ad. And another.

In fact, every single ad in the Metro station — from the turnstiles to the walls — was for the Texas university 1,400 miles from Washington.

…Potential students might see the ads, yes, but **hopefully so will people who grant research funds, like from the National Science Foundation**."

TEXAS A&M UNIVERSITY.

Source: Kelly J, "A Little Bit of Aggieland Has Taken Over Metro Center This Month," *The Washington Post*, October 26, 2016; Texas A&M University, "Texas A&M Takes Over Washington D.C. Metro," October 31, 2016; EAB interviews and analysis.

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Remembering the Good Old Days

Four Pillars of "The Strategy of Having No Real Strategy"

Pursue Every Opportunity

Assumption:

"We can be excellent at all kinds of research and in all disciplines. So we should treat all opportunities equally."

Approach Each Opportunity the Same Way

Assumption:

"Our historic approach to competing for dollars has served us this long. No need to reinvent the wheel."

Ignore Competitor Strengths and Strategies

Assumption:

"We shouldn't waste time evaluating our competitors—since we can't control what they do, it won't help our success rates."

Assume Faculty Can Go It Alone

Assumption:

"Our faculty are smart and more than capable of submitting competitive proposals without any campus support or investment."

Historic Approach No Longer Sufficient for Growth

"I'd love to have a culture where every person has a grant, but we aren't going to reach $300 million on a single-PI portfolio."

Vice President, Research
Public R1 University

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Source: EAB interviews and analysis.

Federal Tide Has Already Begun to Turn

The Quantitative Evidence Is Not Definitive…

Data Sources EAB Reviewed

- Federal agency budgets and strategic documents
- Appropriating committee hearings
- Agency proposal data (e.g., Grants.gov)
- Higher Education Research and Development (HERD) survey

Limitations of Data

- Allocation discretion at program officer level
- Cannot drill down to tactical decisions or determine causality
- Annual opportunity volatility
- Insufficient granularity

…But All Signs Suggest Agencies Are Shifting Dollars Toward Large and Complex Opportunities

Lagging Indicators

- Increase in multi-PI awards (especially for high-dollar opportunities)
- Increase in number of centers and center-level awards
- Increase in limited submission opportunities
- Increase in agency rhetoric about "interdisciplinarity," "convergence," and "collaborative" research

Agency Rationale

- Reduce agency **administrative burden**
- Yield greater impact and **return on investment**
- Gain **political cover** from demands to explicitly fund "national priorities"
- **De-risk** agency investments by investing in universities most likely to "succeed"

> *"When I was at NSF, I saw a shifting or reshuffling of existing research dollars toward larger opportunities that required multiple PIs and aligned with multidisciplinary areas of interest for the agency."*
>
> *Former Program Officer, National Science Foundation*

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Source: EAB interviews and analysis.

Not Your Mentor's Award

All Opportunities Growing in Complexity

Large and Complex Opportunities…

…require cross-disciplinary, cross-unit, cross-institutional, and/or cross-sector teams and coordination

…entail a more complicated budget exercise, as grants typically exceed $1 million

…typically demand institutional cost-sharing and/or infrastructural investments

…include significant education and outreach components that necessitate dedicated staff and community engagement expertise

…occur inconsistently and often unpredictably because of longer award timeframes and changing funder priorities

…frequently limit the number of submissions allowed per institution

Example Large and Complex Awards

National Science Foundation

- Engineering Research Centers
- Materials Research Science and Engineering Centers

National Institute of Health

- P[1] and U[2] Grants

Department of Energy

- Engineering Frontier Research Centers

Department of Defense

- University Affiliated Research Centers

Tri-Council

- New Frontiers in Research Fund

1) Program Project/Center Grants.
2) Research Project Cooperative Agreement.

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Source: EAB interviews and analysis.

A Higher Bar to Clear

L&C Grants Have Stricter Expectations and Mandates

> A cooperative agreement is not a gift, it's almost a contract. When you win one of these awards, you are considered to be on contract and treated as such. The agency must to respond to advisories and committees so it must ensure that universities are working to successfully execute the grants.
>
> *Former Program Director, National Institutes of Health*

Challenges Faced When Executing L&C Awards

Agency Reporting

Universities must respond to agency inquiries and status updates throughout grant process

Administrative Support

Research offices must hire or backfill staff positions to fulfill additional requirements of L&C awards

Program Management

Awards must adhere to strict timelines and milestone mandates

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Source: EAB interviews and analysis.

Good for Them, Good for Us

Benefits Associated with Large and Complex Federal Awards

Problem Complexity

Enables institutions to undertake more complex research by providing greater funding over longer timeframe

Reputational Impact

Increases opportunities for media attention and prestige—and for more researchers

Administrative Capacity

Helps institutions gain experience and credibility as responsible administrators

Relationship Building

Facilitates formation and strengthening of relationships with partners, agencies

Innovation Impact

Paves the way to create innovative new disciplines, methods, and curriculum

Future Positioning

Increases institutional competitiveness for future awards

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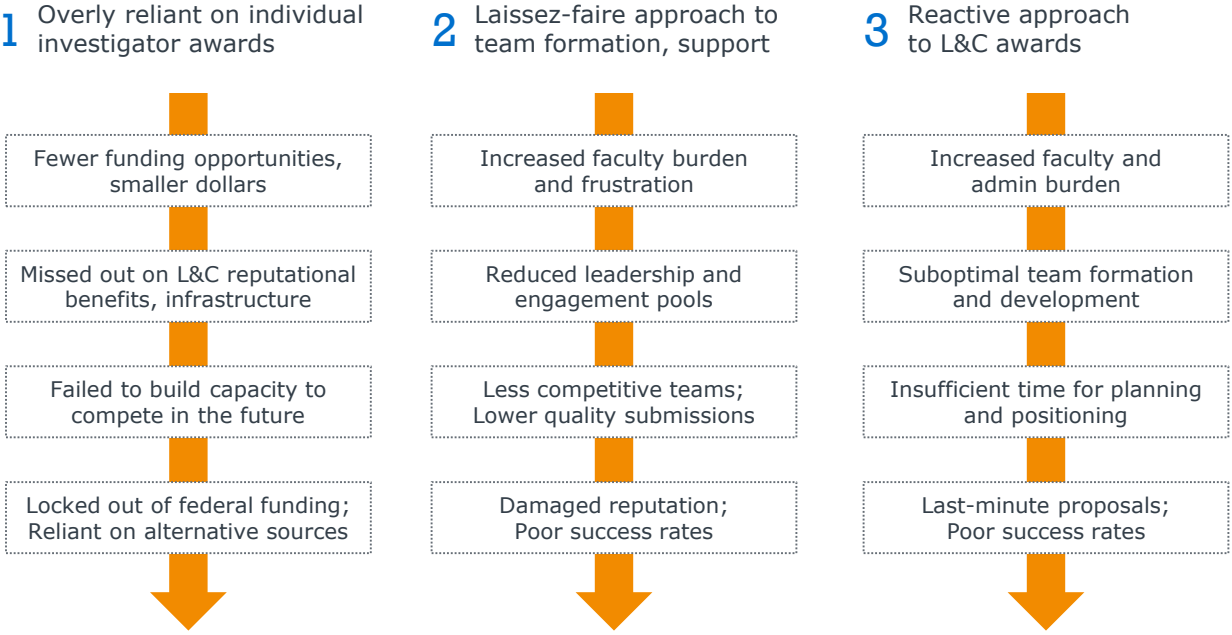
Source: EAB interviews and analysis.

A Rocky Road

Three Potential Pitfalls in Journey to Grow the Research Enterprise



Stagnated Research Expenditures

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Source: EAB interviews and analysis.

Research Development (RD) to the Rescue

Traditional Approach to RD

Support services decentralized across campus units

Predominantly focuses on individual investigator awards

Uses same playbook of activities and services as other institutions

Broad mandate to help faculty compete for extramural awards

Case in Brief: National Organization of Research Development Professionals (NORDP)

- NORDP was established in 2010 to build community for the growing field of research development professionals in higher education
- Members share best practices for securing and managing research funding and facilitating building collaborative services through research offices
- NORDP supports members with RD activities such as strategic research advancement, research communications, enhancement of team science and proposal development services

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Source: NORDP; EAB interviews and analysis.

Research Development 2.0

Universities Must Evolve RD Priorities to Reflect L&C Grants

Evolving RD Strategy

How can we position ourselves to be more competitive for L&C awards?

How can we adjust our existing resources to support the pursuit of L&C awards?

Refining Institutional Research Strategy

How can we make research strategy more comprehensive and institutionally aligned?

Developing Research Partnerships

How can we tap a range of external and internal stakeholders (not just RD staff) to increase competitiveness

Adapting Research Office Services and Resources

How can we prioritize activities and services based on institution-specific goals and objectives?

Supporting Building Research Teams

How can we support faculty collaborate by breaking disciplinary siloes?

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Source: EAB interviews and analysis.

Our Focus Today

Expediting the Shift Toward Strategic Research Development

I

Use Data and Analytics to Drive Research Strategy

1. Competitive Intelligence Analyses

II

Better Position Institution with Pre-RFP Interventions

2. Federal Agency Relationship Building
3. Complementary Partnership Development

III

Tailor Resources to Support Team Development

4. Guided Team Formation
5. Targeted Leadership Identification and Training
6. Scaled Research Project Management Resources

IV

Upgrade Proposal Development Services to Improve Submission Quality

7. Proactive Proposal Interventions
8. Proposal Reapproach Support

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Source: EAB interviews and analysis.

Use Data and Analytics to Drive Research Strategy

- Tactic 1: Competitive Intelligence Analyses

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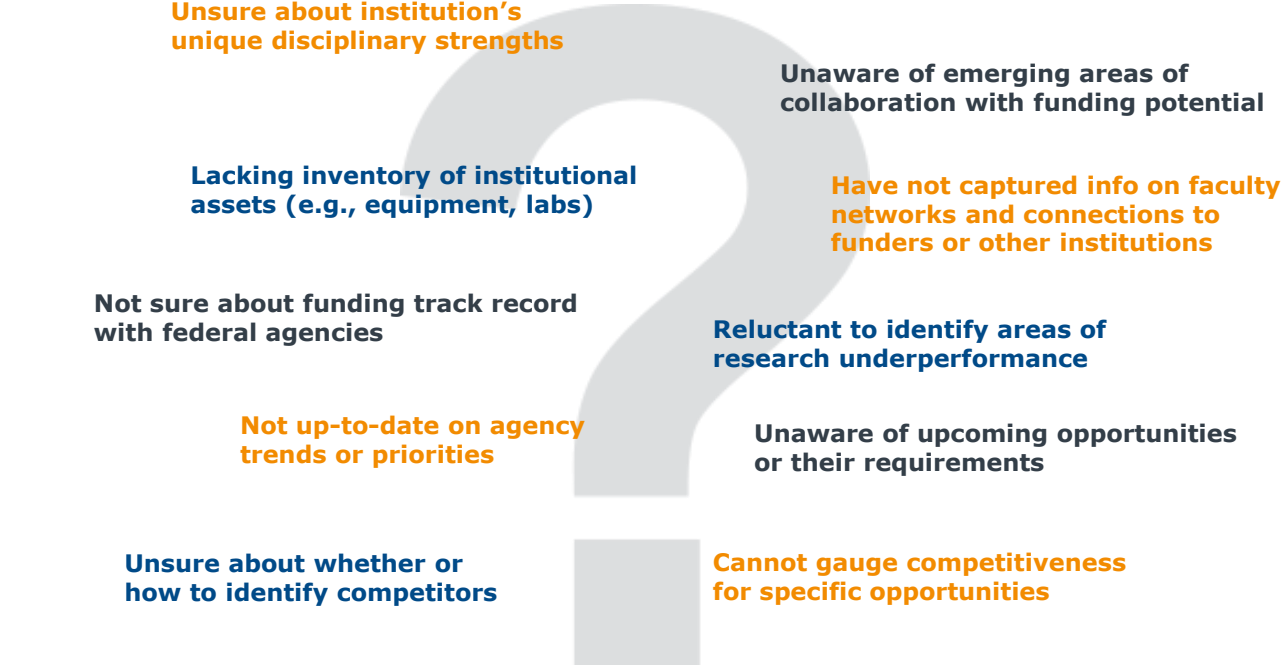
Overwhelmed by Indecision

Lack of Data, Analyses Results in Research Office Deferring Strategy to Faculty



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Source: EAB interviews and analysis.

Overcoming Analysis Paralysis

Research Office Must Play Larger Role to Win L&C Awards

Analyses for Developing Your Research Strategy

Craft Strategy to Target Best-Fit L&C Opportunities

Self-Analysis

Identify distinctive institutional strengths and assets using a campus-wide process and comprehensive sources and metrics

Opportunity Analysis

Assess how institutional strengths align with funder priorities and specific opportunity requirements

Competitor/ Collaborator Analysis

Determine institution's position in competitive landscape by identifying and analyzing potential competitors and/or collaborators

Corresponding Case Studies:

THE UNIVERSITY OF NEW MEXICO

THE UNIVERSITY OF ARIZONA

Arizona State University

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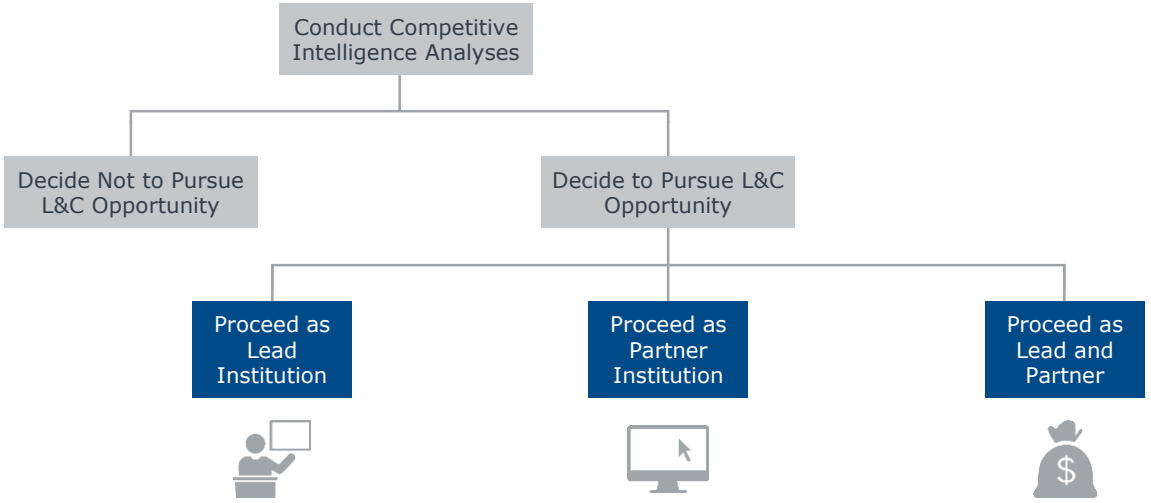
Source: EAB interviews and analysis.

Keep Your Eye on the Prize

Analyses Drive Decisions About Pursuing L&C Awards



- Institution is most competitive applicant for the opportunity
- Institution is highly competitive for the opportunity and can address gaps or weaknesses before submission

- Institution only possesses one niche strength, but it is critical for the opportunity
- Institution lacks needed support or resources to lead

- Institution has multiple faculty teams that are genuinely interested (e.g., not just seeking to increase number of submissions)

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Source: EAB interviews and analysis.

Self-Analysis

Four Steps to Identify Institutional Strengths and Assets

1 Get stakeholder buy-in

Implementation Guidance:

- ✓ CROs[1] play critical role in garnering deans' support so they will contribute needed intel and data
- ✓ Clarify responsibilities to reduce duplicative efforts and concerns about time investment
- ✓ Explain intentions and proposed process upfront

2 Compile research data by consulting wide array of sources and metrics

Implementation Guidance:

- ✓ Faculty, deans, ADRs[2], and departmental administrators possess valuable intel that is rarely captured in a systematic way
- ✓ Collect data on research landscape to contextualize performance (e.g., national success rates)
- ✓ Conduct an environmental scan (e.g., evaluate state landscape)

3 Identify strengths and weaknesses

Implementation Guidance:

- ✓ Do not focus exclusively on established strengths—also pinpoint emerging and latent strengths
- ✓ Embrace broader conception of weaknesses (e.g., research underperformance, lack of equipment, insufficient staffing or expertise)

4 Prioritize services and resources based on analysis

Implementation Guidance:

- ✓ Highlight strengths in strategic plan and research marketing material
- ✓ Strategically allocate internal resources (e.g., seed funding, administrative support, cluster hires) to elevate strengths or address weaknesses

1) Chief Research Officers.
2) Associate Deans for Research.

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Source: EAB interviews and analysis.

Using Data to Pinpoint Strengths, Weaknesses

Research Office Should Consult Wider Range of Sources and Metrics

Data Sources

- Publication and citation databases
- Electronic Research Administration System
- Faculty CVs[1] and websites
- National and international rankings
- News and media announcements
- Institutional and research office investments (e.g., internal seed funding)
- Campus information systems and catalogs (e.g., course handbook, faculty activity reporting)

Key Metrics

- Proposal success rates (by funder, discipline, unit)
- Total research funding (by funder, discipline, unit)
- Number of publications, citations, patents (by funder, discipline, unit)
- Research key words (in proposals or publications)
- Disciplinary rankings
- Faculty awards and honors
- Large, prominent, collaborative awards
- Existing centers, institutes, or collaborations
- Number of faculty, postdocs, grads, undergrads
- Notable infrastructure and facilities

UNIVERSITY OF ARKANSAS

Research Funding Dashboards

Research offices create dashboards —like the University of Arkansas's— to make grant proposal and award data easier for stakeholders to access, filter, and analyze.

UNIVERSITY OF KENTUCKY

Innovative Mechanisms to Capture Data on Strengths and Collaborations

- Research office created natural language processing tool to identify faculty outside of medical school conducting opioid research
- Research office hired computer science and business faculty to develop model and analyze faculty network maps to identify current collaborations

1) Curricula vitarum.

Source: University of Arkansas, RSSP Historic Awards and Proposals; University of Kentucky, Lexington, KY; EAB interviews and analysis.

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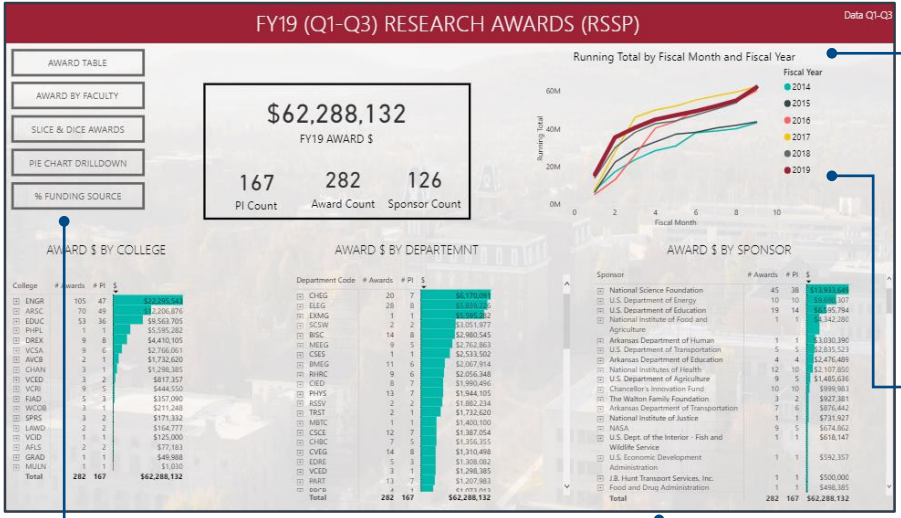
Make Data Easier to Access, Filter, and Analyze

Screenshot of the University of Arkansas's Grant Awards and Proposals Dashboard



Open Access

Internal and external stakeholders can access the dashboard via the Research & Innovation website

Historic Data

Dashboard includes data from current and previous four fiscal years

Filter Function

Data can be sorted and filtered by factors like award, sponsor, and faculty member

Intuitive User Interface

Dashboard automatically updates when users click on data elements

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Source: University of Arkansas, RSSP Historic Awards and Proposals; EAB interviews and analysis.

Assess Where You're At—Then Decide Where to Go

UNM Strategic Plan Working Groups Identify Strengths, Weaknesses

THE UNIVERSITY OF NEW MEXICO

Data Capture

- Interviews and roundtable discussions
- Campus surveys
- Internal research and faculty data
- External funder websites

Environmental Scan

- One of the few minority-majority states in U.S.
- State demographics pose challenges for state public health and health policy
- State ecosystems are highly vulnerable to impacts of climate change
- State budget cuts expected to continue
- In-state national labs (e.g., AFRL[1], Los Alamos, Sandia)

University of New Mexico's Distinctive Research Strengths	Weaknesses and Challenges
✓ Only flagship in the country that is also a Hispanic Serving Institution	✗ Research is strong but not well-known outside the institution
✓ Research expertise related to the southwest, renewable energy, and "water in the west" aligns with local, state, and national research priorities	✗ Lack of adequate infrastructure to take research to next level
✓ Strengths in materials, nano-science, optics, and computation	✗ Insufficient support for interdisciplinary research
✓ Leader in research focused on social and economic well-being of minority populations	✗ Lack of integration in research community outside STEM fields

1) Air Force Research Laboratory.

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Source: University of New Mexico, Research Strategic Plan Working Group Reports; EAB interviews and analysis.

Opportunity Analysis

Four Steps to Assess How Strengths Align with Funders and Opportunities

1 Gather info on agency priorities and historic engagements

Implementation Guidance:

- ✓ This is especially important for mission-driven agencies (e.g., DOD)
- ✓ Engagement track record is often a prerequisite to winning a L&C award
- ✓ Historic knowledge of NSF and NIH is no longer enough

2 Assess university alignment with agency priorities and opportunities

Implementation Guidance:

- ✓ Priority alignment is major factor in L&C award decisions
- ✓ Ensure eligibility and alignment before disseminating opportunities
- ✓ Combine broad and targeted dissemination using multiple communication channels

3 Conduct in-depth analyses of L&C opportunities

Implementation Guidance:

- ✓ Deprioritize analyzing recurring individual investigator awards (e.g., R01, CAREER) that are well-known and smaller dollar—faculty and unit staff are equipped to handle these
- ✓ Analyze explicit and implicit requirements of L&C RFPs

4 Use agency knowledge and specific opportunity analyses to gauge competitiveness

Implementation Guidance:

- ✓ Sharing analyses with internal stakeholders can help CROs indirectly influence go/no-go decisions
- ✓ Identify gaps (e.g., expertise, infrastructure) that need to be addressed to increase competitiveness

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Source: EAB interviews and analysis.

Using Data to Assess Agency, Opportunity Alignment

Research Office Needs to Take Advantage of Publicly Available Information

Data Sources

- Funding databases (e.g., Grants.gov, SPIN, Pivot, GrantForward)
- HERD[1]
- Agency websites, workshops, webinars
- Interactions and connections with agency staff (e.g., review panels, program officers)
- Professional associations, consultants, lobbyists (e.g., National Academies, AAAS[2], Lewis-Burke Associates, Academic Research Funding Strategies)

Key Metrics

- Agency materials (e.g., mission statements, org charts, white papers, meeting minutes, leadership speeches)
- Historic agency budgets
- Recent or current RFPs
- Abstracts of recently funded proposals
- Total funding and number of awards from funder (all time, previous year, by discipline and unit)
- Success rates for funder (all time, previous year, by opportunity, discipline, and unit)

Data Collection—Not Availability—Slows Process

Public information is robust but disorganized. Research offices should prioritize time-intensive, in-depth opportunity analyses for L&C awards.

Analyze Explicit RFP Requirements…

- Flag unclear sections, terms, or expectations
- Identify submission requirements and restrictions, then crosscheck with institutional capacities
- Note the space allocated to each section—this indicates agency priorities and should guide proposal section lengths

…and the "Unspoken" Requirements

- Mission alignment
- Geographic location
- Track record of winning and managing awards
- Credibility and diversity of leaders and team
- History and diversity of collaboration/partnership
- Project management expertise and capacity
- Resource stewardship and cost-sharing capacity

1) Higher Education Research & Development Survey.
2) American Association for the Advancement of Science.

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Source: EAB interviews and analysis.

Capitalizing on a Research Niche

University of Arizona's Landscape Analysis for USDA Center Proposal

Sponsor

Research development staff with agency expertise analyzed USDA's research portfolio and funding trends

Funding Opportunity

Staff also collaborated with interested faculty member to assess center opportunity and how it aligned with her research portfolio and expertise

Previous Awards

Research development staff identified a clear gap in the southwest region after mapping out past awards and partner institutions

- Used results to identify team gaps and strengthen alignment with sponsor and solicitation
- Connected faculty member with additional contacts to help form collaborative team
- Provided full lifecycle proposal development support—from concept development to reverse site visit preparation

Results

Submitted and won $15M USDA center proposal that included several industry and university partners, as well as over 100 researchers, post docs, graduate students, undergraduate students, and staff.

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Source: University of Arizona, Tucson, AZ; EAB interviews and analysis.

Competitor/Collaborator Opportunity Analysis

Four Steps to Determine Institution's Position in the Competitive Landscape

1 Collect data and intel to generate initial list of potential competitors/collaborators

Implementation Guidance:

- ✓ Internal stakeholders (e.g., deans, ADRs[1], faculty) are key sources of information and can help vet lists
- ✓ Avoid overreliance on traditional comparison groups

2 Build profiles for potential competitors/collaborators

Implementation Guidance:

- ✓ Gather details on institutional attributes or designations, infrastructure, research strengths, key faculty members, funding success, gaps in competitiveness, and likelihood of submission for same opportunity

3 Compare strengths with those of competitors/collaborators

Implementation Guidance:

- ✓ Compare leadership experience and capacity, geographic competitiveness, institutional designations and attributes, facilities and infrastructure, collaboration track records, institutional buy-in and investment, community support, positioning history, and gaps

4 Rank order potential applicants on competitiveness—then decide if and how to proceed

Implementation Guidance:

- ✓ Combine profiles with knowledge of agency priorities and opportunity requirements when ranking
- ✓ Faculty can help gut check rankings
- ✓ Use institutional rankings to decide whether to lead or partner

1) Associate Deans for Research.

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Source: EAB interviews and analysis.

Using Data to Analyze the Competitive Landscape

Research Office Should Leverage Faculty and Qualitative Insights

Data Sources

- HERD[1]
- Publication and citation databases
- Agency databases
- Opportunity-specific websites
- International and national rankings
- Research network vendor tools
- Faculty, deans, ADRs[2], department chairs
- Institutional websites and strategic plans
- Media announcements and social media
- Professional conferences
- Faculty CVs, biosketches, websites

Key Metrics

- Previous award winners, applicants, and partners
- Institutions that have won similar awards from other funders
- Institutions with strong patent, publication, or citation track records in related topic areas
- Institutions with strong rankings in related disciplines/fields
- Institutions that have been positioning and promoting themselves in related topic areas

Embrace the Power of Qualitative Intel

Limited access to other institutions' research data (e.g., proposals, awards, publications) makes evaluating potential competitors challenging. But research offices underestimate the availability and value of information accessible through web-based searches or personal networks.

Faculty Input Is Critical for Success

- Disciplinary expertise and networks allow faculty to assess which researchers and institutions are well-suited or already planning to submit proposals for specific opportunities
- Faculty frequently possess otherwise uncaptured information (e.g., upcoming retirements, personality conflicts, poor leadership) that helps narrow the competitive landscape

1) Higher Education Research and Development Survey.
2) Associate Deans for Research.

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Source: EAB interviews and analysis.

Getting Out Ahead of the Competition

ASU Uses Multiple Methods to Identify Competitors, Determine Strategy

Approaches to Identifying Potential Competitors

ASU Arizona State University

Publication and Funding Data

- Uses Elsevier's SciVal tool to identify top institutions based on scholarly output by topic area
- Supplements SciVal data with HERD[1] data on top-funded institutions by topic area

Example:

- *Reviewed publications and research funding in artificial intelligence from 2013-2018*
- *Rank-ordered top institutions based on expenditures and outputs to gauge where ASU sits among competitors*

Geographic Landscape

- Reviews geographic distribution of past awards to identify regional funding patterns and cycles
- Analyzes regional players and their attributes to gauge competitiveness

Example:

- *Geographic analysis of I-Corps nodes suggested a southwest node would likely be awarded in 2016*
- *A Texas partnership was a probable southwest competitor since Texas institutions had built a strong reputation in entrepreneurial education*

Past Winners

- Review previous awardees and assess their alignment with new cycle requirements
- Supplement list with "dark horse" applicants that have previously been partners, or that have notable faculty or up-and-coming programs in the field

Example:

- *Reviewed six previous award cycles of NASA's Astrobiology Institute*
- *Predicted that winners from cycles 1 and 5 would again be strong contenders*
- *Result: 60% of award recipients were from cycle 5 and a new recipient was on their up-and-coming list*

1) Higher Education Research and Development Survey.

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Source: Arizona State University, Competitive Intelligence; EAB interviews and analysis.

Deploying Competitive Intelligence

Strategic Considerations for Research Leaders

Discussion Questions

1. Where have you had the most success in deploying competitive intelligence strategies? What are the hurdles you have experienced in the process?

2. How well do vendors meet your current data capture and analysis needs? What gaps exist in functionality?

3. What metrics do you or could you use to convince faculty to proceed as either a lead or partner?

Potential EAB Tools to Support Research Staff

Step-by-step playbook for running competitive intelligence analyses

Research network vendor analysis

Opportunity analysis checklist/worksheet

Other suggestions?

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Source: EAB interviews and analysis.

Better Position Institution with Pre-RFP Interventions

- Tactic 2: Federal Agency Relationship Building
- Tactic 3: Complementary Partnership Development

II

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Late Out of the Gate

> “As soon as they released the RFP, we started pulling our faculty together. It was basically a dream team—all our best PIs were involved, along with experts from nearby institutions. We worked with them to develop their idea and a strong technical proposal. But at the end of the day, we still didn’t win.”

Vice President for Research,
Public R1 Institution

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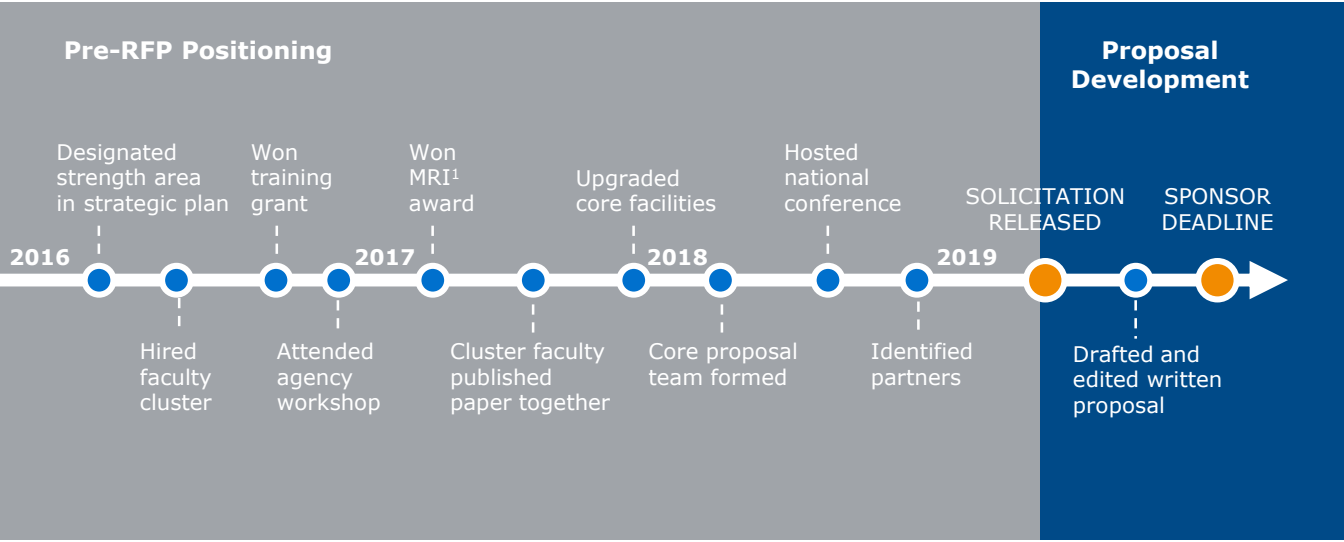
Source: EAB interviews and analysis.

A Winning Strategy

Large and Complex Awards Require Proactive Positioning



1) Major Research Instrumentation Program.

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Source: EAB interviews and analysis.

(How to Get) In It to Win It

Where to Focus to Bolster Your Competitive Position

Faculty Expertise

Build critical mass of faculty with needed skills and experiences

Funding Track Record

Enhance and diversify portfolio of awards won

Infrastructural & Administrative Capacity

Acquire or upgrade needed equipment, facilities, and administrative tools and expertise

Funder Relationships

Develop personal connections and positive reputation with sponsors

Strategic Partnerships

Collaborate with other entities that possess valuable resources or expertise

Currently Available URF Resources:

- Cluster Hiring
- Grant Writing Trainings
- Research Mentoring Programs

- Fellowships and Training Grants
- Industry Partnerships
- Grand Challenges

- Electronic Research Administration Systems
- Core Facilities
- Pre and Post Award Offices

Tactic 2: Federal Agency Relationship Building

Tactic 3: Complementary Partnership Development

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Source: EAB interviews and analysis.

It's Not What You Know, It's Who You Know

Award Decisions Increasingly Depend on In-Person Interactions…

> "When I was a program officer, more than 25% of my funding decisions were influenced by in-person interactions with faculty submitting proposals. And frankly, I think that percentage has increased since I left."
>
> Former Program Officer,
> NATIONAL SCIENCE FOUNDATION

…But It's Harder and Harder to Secure Face Time with Decision Makers

> Our faculty had the relevant expertise but since we hadn't won a large award from DOD before, we weren't even on the program manager's radar."
>
> *— Vice President for Research, Public R1 University*

> My office didn't find out that the agency had already held a meeting and invited other institutions to help write the RFP until after the fact—now we're having to work twice as hard to even be considered."
>
> *— Vice Provost for Research, Public R1 University*

> I hired a PR firm in DC that said they could get my faculty into the important meetings, but we're twelve months in and we haven't gotten a single invitation."
>
> *— Vice Provost for Research, Private R2 University*

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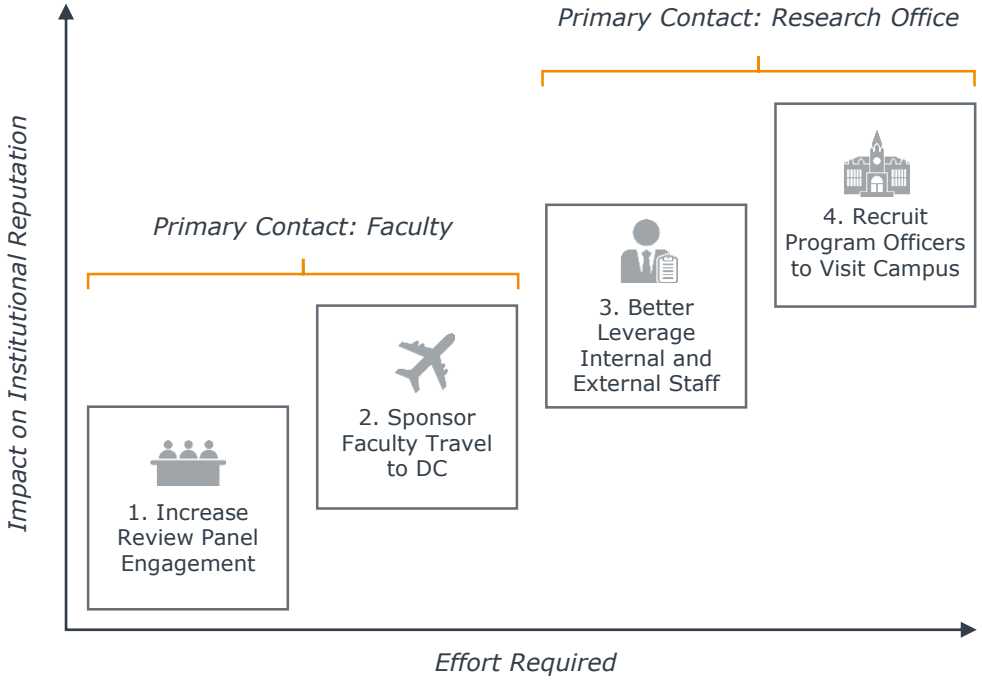
Source: EAB interviews and analysis.

Getting Your Foot in the Door

Four Main Levers for Faculty and Institutions to Cultivate Federal Relationships

Strategies Mapped by Effort Required and Reputational Impact



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Source: EAB interviews and analysis.

1. Increase Review Panel Engagement

Five Steps to Grow and Optimize Faculty Review Panel Service

1 Articulate Benefits

Emphasize full spectrum of benefits and share examples from faculty who have leveraged service experience to compete for funding

2 Explain Process

Publicize steps faculty should take to position themselves as potential reviewers and offer guidance as needed

3 Create Incentives

Provide small monetary incentives to signal that university values this engagement and to help defray costs (e.g., travel)

4 Recognize Service

Count participation toward faculty service to free up time and reduce perception that review panel service is another unrecognized responsibility

5 Capture Insights

Ask former reviewers to present at future workshops, serve as mentors, and share intel with the campus community

Case in Brief: Towson University

- Office of Sponsored Programs and Research (OSPR) created Peer Review Incentive Program to encourage faculty participation on review panels
- Four weeks prior to serving on a federal review panel, faculty can submit an application to OSPR to receive a $750 stipend
- OSPR requests—but does not require—that faculty who receive stipends share info from their experience with other researchers on campus or assist with future OSPR workshops

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Source: Towson University, Peer Review Incentive Program and Application; EAB interviews and analysis.

2. Sponsor Faculty Travel to DC

Structure Travel Program to Improve Funding Conversations

Why Faculty Struggle to Engage Federal Program Officers	Features of Effective Travel Programs
✖ Deterred by costs associated with traveling to DC	→ Provide funding (ideally, upfront) for faculty who satisfy clear eligibility and proposal requirements
✖ Hesitant to travel and speak with program officers independently	→ Use a cohort model and send research staff to accompany the group and attend meetings as needed
✖ Unsure how to prepare for program officer conversations	→ Have faculty apply to program several months prior to travel and collaborate with research office to develop concept papers, biosketches, and talking points
✖ Unclear about next steps to maximize the benefits of travel	→ Require post-travel report summarizing insights gleaned and next steps for submission—then track participants' subsequent proposal submissions/awards

University of Idaho's ORED[1] RISE[2] Meet Your Sponsor Program

University of Idaho

- Two formal proposals per year for DC travel cohort; rolling applications for individual, non-DC travel
- Awards up to $1,500 per PI
- In 2019, funded 5 individuals for 2 to 3 day trip to DC

1) Office of Research and Economic Development.
2) Research, Infrastructure, and Scholarly Excellence.

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Source: University of Idaho, Meet Your Sponsor; EAB interviews and analysis.

3. Better Leverage Internal and External Staff

Clarify Roles and Responsibilities

Examples:

- Determine which research office representatives attend meetings and agency conferences in DC based on their personal backgrounds, networks, and strengths
- Designate a staff member as the dedicated relationship manager for lobbyists and third-party consultants
- Hire and/or restructure research development roles to focus on specific funding agencies

Create Accessible Collateral

Examples:

Louisiana State University created one-page handouts that showcase its research strengths and how faculty research is addressing real-world problems that external stakeholders care about

Vanderbilt University produced two-page overviews of the institution's relationship with major federal funding agencies

Consider Relocating Research Staff to DC

Examples:

Associate Vice President, Research Development

- Relocated in 2018
- Focused on cultivating long-term relationships with funding agencies, especially DOD
- Seeks to "get on the front end of writing RFPs"

Director, External Partnerships and Economic Development

- Relocated in 2016
- Tasked with broad partnership building, which includes federal agencies but also other institutions and industry

Source: Florida International University, Miami, FL; Louisiana State University, Fact Sheets; University of Arizona, Tucson, AZ; Vanderbilt University, Federal Relations; EAB interviews and analysis.

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4. Recruit Program Officers to Visit Campus

Successfully Drawing Agency Reps to Campus Requires an Updated Approach

Six Strategies to Consider

Leverage DC Presence

Use federal affairs team to promote research interests in DC and make initial introductions to agency contacts

Provide Non-Monetary Incentives

Invite program officers to participate in distinguished lecture series or attend other research events during their visit to campus

Frontload Relationship Building

Attend networking events and begin meeting with program officers—especially those who are new in seat—well in advance of asking them to visit campus

Collaborate with "Competitors"

Partner with nearby institutions to host a joint visit; this can help smaller institutions compete for program officer time and it allows program officers to maximize the impact of their travel

Draw On Personal Networks

Ask faculty or administrators with personal connections to the agency or program officer to make the visit request

Create a Compelling Agenda

Design and promote a customized visit agenda that aligns with program officer and institutional goals

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Source: EAB interviews and analysis.

4. Recruit Program Officers to Visit Campus (Cont.)

Ensure Agenda Mutually Advances Agency and Institution Goals

Sample Day-Long Agenda

Department of Defense (DOD) Program Officer Visit

9:00am: Breakfast with Chief Research Officer

10:00am: Seminar (followed by Q&A)

11:30pm: Tour of Campus Facilities and Cores

12:30pm: Lunch with Provost and President

1:30pm: One-on-One Faculty Meetings

3:00pm: Tour of Labs and Centers/Institutes

4:00pm: One-on-One Faculty Meetings

5:30pm: Dinner with Deans and ADRs[1]

Takeaways for Research Office

- Incorporate some less structured sessions to allow for candid conversations with program officer
- Reduce burden on visiting program officers by minimizing number of sessions for which they are presenting
- Directly involve senior leaders to signal the institution has prioritized engagement with the agency and acknowledge DOD's preference for hierarchy
- Showcase the institution's unique capacity and infrastructure
- Collaborate with ADRs to identify faculty whose research aligns with agency interests and help them prepare prior to the visit

1) Associate Deans for Research.

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Source: EAB interviews and analysis.

Partners Can Make or Break Successful Proposals

Common Pitfalls of Partnership Strategies

Lead Institution

- Failed to consider specific opportunity requirements
- Only consulted publication data to identify potential partners
- Defaulted to past partnerships
- Only considered faculty preferences when making partner decisions

Result:
L&C proposal rejected due to gaps in expertise unaddressed through chosen partnership

Partner Institution

- Failed to market research expertise and assets
- Waited to be solicited by a lead institution
- Assumed niche strengths were not relevant for L&C opportunities
- Did not leverage faculty networks and connections

Result:
Missed a well-aligned opportunity to partner on L&C award

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Source: EAB interviews and analysis.

How To Select Your Ideal Partner

CELL-MET

Factors for Lead Institutions to Consider

Track Record

History of success with agency or award

Equipment and Facilities

Specialized infrastructure needed for success

Network

Connections to agency, other institutions, community partners

Designations

Institutional designations (e.g., MSI[1], NCI[2])

Geography

Locations of previously awarded institutions

Case in Brief: 2017 NSF ERC[3] in Cellular Metamaterials

Lead: Boston University

Partners: Florida International University, University of Michigan

Affiliates: Argonne National Laboratory, Columbia University

Strategic Considerations:

- **Track Record**: University of Michigan professor Stephen Forrest is national expert with strong NSF funding record
- **Equipment and Facilities**: Argonne National Laboratory has Advanced Photon Sourcing equipment critical to project
- **Network**: FIU has strong network of regional schools and communities for education and outreach programming
- **Designations**: Columbia University designated as the Bio-Imaging Core for the NIH Tissue Engineering Resource Center
- **Geography**: No active ERCs in the Northeast

1) Minority Serving Institution.
2) National Cancer Institute.
3) Engineering Research Center.

Source: Argonne National Laboratory, Lemont, IL; Boston University, CELL-MET; Columbia University, New York, NY; Florida International University, CELL-MET; National Science Foundation, ERCs; EAB interviews and analysis.

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How to Position Yourself as a Partner

Three Approaches to Promote Strengths, Capabilities

FLORIDA INTERNATIONAL UNIVERSITY

Market Strengths

- Highlight unique research strengths and available resources to other universities, agencies, and the broader public through strategic plan and other university marketing materials.

- **Example:**
  FIU's *BeyondPossible2020* strategic plan highlights their "Preeminent Programs" and regional community engagement.

  Result: FIU has built a strong reputation as an expert in niche disciplines as well as education and outreach.

Demonstrate History

- Promote past research partnerships and the depth of cross-institutional engagements through press releases and university media outlets.

- **Example:**
  FIU promotes involvement in L&C research partnerships on their website (e.g., PATHS-UP) and in media announcements (e.g., ASSIST).

  Result: FIU has gained recognition from other schools and research offices as a preferred partner by promoting their engagement on three NSF ERCs[1].

Proactively Outreach

- Identify and proactively reach out to institutions that complement or advance existing research strengths to develop personal connections.

- **Example:**
  FIU relocated their Director of External Partnerships to DC to network and build relationships with prospective partners.

  Result: FIU has established stronger connections with universities, federal agencies, and industry—which has directly led to new research collaborations.

1) Engineering Research Center.

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Source: Florida International University, *BeyondPossible 2020*; EAB interviews and analysis.

Tailor Resources to Support Team Development

- Tactic 4: Guided Team Formation
- Tactic 5: Targeted Leadership Identification and Training
- Tactic 6: Scaled Research Project Management Resources

III

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Barriers, Perceived and Otherwise

Reasons Why Faculty Don't Participate in Collaborative Research

Structural Barriers

Underappreciated Ursula

"My department doesn't reward collaborative research during promotion and tenure decisions."

Busy Burt

"I am already working on several individual research projects—and that's on top of my teaching and service obligations."

Risk-Averse Ron

"I barely have enough funding for my own small project—no less enough to jumpstart a big collaboration."

Non-Structural Barriers

Siloed Susan

"I don't know anyone outside my department and on a campus this size, I wouldn't even know where to look for a good partner."

Independent Ingrid

"I have no idea how to get a big group of highly independent researchers to work well together as a team."

Overwhelmed Otto

"I don't want to spend all my time managing logistics—there are just too many people and moving parts for me to coordinate."

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Source: EAB interviews and analysis.

Early Moves to Eliminate Structural Barriers

Structural Barriers	Three Approaches to Address Chronic Challenges
P&T[1] Guidelines Favor Individual Research	The University of Oklahoma Health Sciences Center **Adjust Institutional P&T Guidelines** VPR convened faculty from across colleges to institute P&T guidelines that would elevate team research as an institutional strategic priority
Teaching Loads Prevent Faculty Engagement	Appalachian State University **Buy Out Instructional Obligations** Research office provides course release funding for faculty applicants who are pursuing an extramural funding opportunity
Internal Funding Programs Fail to Support Teams	University of Michigan **Sponsor Interdisciplinary (ID) Research Teams** Mcubed program replaces traditional review system with a unique, token-based system that uses peer-to-peer review and distributes real-time funding for ID projects

1) Promotion and tenure.

Source: Appalachian State University, Internal Grants; OUHSC, Promotion and Tenure Guidelines; University of Michigan, Mcubed Program; EAB interviews and analysis.

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Non-Structural Barriers Still Impede Progress

Practices for Supporting Team Formation and Development

Faculty lack the connections and opportunities needed to form competitive teams on their own

→ **Tactic 4:** Guided Team Formation

Faculty are not interested in or do not possess the skills required to lead large research teams

→ **Tactic 5:** Targeted Leadership Identification and Training

Faculty are deterred by the administrative burden associated with managing L&C proposal development

→ **Tactic 6:** Scaled Research Project Management Resources

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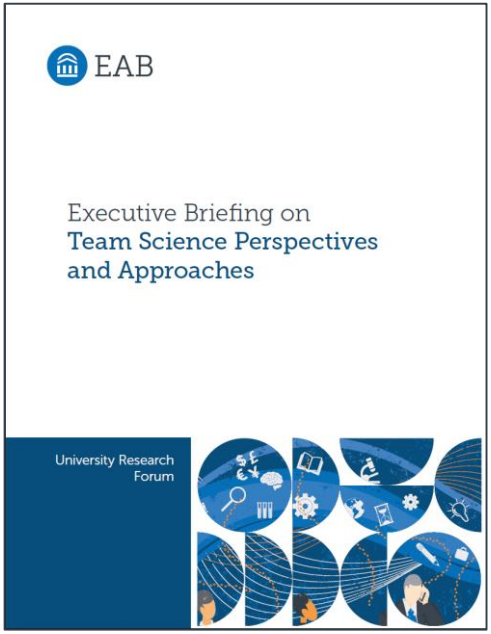
Source: EAB interviews and analysis.

Science of Team Science 101

Latest URF Resource Available Now



Introduction to Team Science

- Explains the emergence, value, and challenges of team science
- Summarizes key findings from 20+ sources and 500+ pages of scholarship on research teams

The Science of Effective Teams

- Identifies six categories of factors that contribute to team effectiveness and productivity
- Provides institutional self-assessment questions and recommended reading list for CROs and their teams

Visit eab.com to download the executive briefing.

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Source: EAB interviews and analysis.

Building Teams by Trial and Error

Costly and Poorly Targeted Programs Don't Yield Desired Outcomes

Common Research Office Programs	Desired Outcomes	Reality Check
Speed Dating Science Cafés TED Talks Cocktail Hours Brown Bag Lunches Lecture Series	Build Faculty Research Teams	**Occasionally Successful** Connections made through programs tend to be short-lived because faculty are unclear about next steps or their ideas don't align with funding opportunities.
	Pursue L&C Opportunities	**Rarely Successful** Programs tend to produce one-off, small-scale collaborations that are not targeted at specific funding opportunities.
	Generate Innovative Solutions	**Very Rarely Successful** Attendees may generate some isolated ideas, but insufficient time and lack of structured guidance prevent them from advancing ideas to solve problems.

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Source: EAB interviews and analysis.

Manufacturing Serendipity

Four Ways Research Offices Can Guide Team Formation

Approach	Focus	Audience	Cost[1]	Time[1]	Return
1. Networking Sessions	Targeted programs for faculty to make connections with others interested in specific topics	Small group of internal faculty	Low (e.g., venue, marketing)	Low (e.g., invitations, outreach)	Short-term, small-scale faculty teams
2. Seminars	Structured programs to teach faculty about emergent topics and agency opportunities	Medium group of internal faculty	Medium-low (e.g., room reservations, speakers)	Medium-Low (e.g., content development, speaker recruitment, advertising)	Short-term, medium-scale faculty teams
3. Symposia	Large-scale programs to convene experts on a specific topic	Large group of internal and external faculty, experts, and partners	Medium (e.g., speakers, travel)	Medium (e.g., speaker recruitment, logistic coordination)	Long-term, large-scale faculty teams
4. Pop-Up Institutes	Short-term initiatives to catalyze interdisciplinary team formation around topic area	Medium to large group of internal faculty and external partners (as needed)	High (e.g., core facility use, space, seed funding)	High (e.g., coordinating proposal reviews, reporting)	Long-term, large-scale faculty teams

1) Evaluated on a four-point scale of low, medium-low, medium, and high.

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Source: EAB interviews and analysis.

Network with Intention and Focus

Iowa Hosts Speed Networking for New Core Research Facility

THE UNIVERSITY OF IOWA

Traditional Speed Networking Program		University of Iowa Microfabrication Facility (UIMF) Speed Networking Event
✖ Vague purpose and agenda	→	✔ Used the launch of new microfabrication facility to focus the program
✖ Advertised to all faculty (e.g., no targeted outreach or recruitment)	→	✔ Targeted biomedical scientists and engineering researchers most likely to benefit from attending
✖ Focused solely on building personal connections	→	✔ Raised awareness of interdisciplinary applications of available microfabrication technology
✖ Not oriented around collaborative funding opportunities	→	✔ Reviewed upcoming funding opportunities relevant to the research focus areas of UIMF
✖ No structured conversation support or prompts	→	✔ Facilitated cross-unit collaborations by highlighting potential topic convergence across disciplines

Iowa's Networking Results

75% Survey respondents reported a new potential research collaboration

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Source: University of Iowa, UIMF Funding Opportunities and UIMF Speed Networking; EAB interviews and analysis.

Keep Faculty Abreast of Emergent Trends

Northwestern Organizes Seminar to Catalyze Collaboration in Quantum

Office of Research Development (ORD) Launching INterdisciplinary Connections Series (LINCS)

Northwestern University

ORD LINCS events feature short presentations by faculty to catalyze ideas and collaborations in emergent interdisciplinary areas (e.g., Internet of Things, National Microbiome Initiative) that align with federal funding.

Engineering Quantum Technologies

Presentations

- ORD provides introduction to funder priorities related to quantum technologies
- Faculty experts present on sub-topics and potential opportunities

✓ Helps convince faculty to collaborate in this area

✓ Allows attendees to identify potential peer collaborators

Agency Reports

- Provides attendees with repository of agency briefings and materials
- Shares analyses of agency strategic plans and emergent research priority areas

✓ Saves faculty time by not having to find and analyze materials themselves

✓ Encourages faculty to consider agency priorities when forming teams

Funding Opportunities

- Raises awareness of current and past related opportunities
- Establishes networks and discussion forums for future funding opportunities

✓ Provides faculty with list of already identified opportunities

✓ Prompts faculty to plan ahead for upcoming awards

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Source: Northwestern University, Evanston, IL; EAB interviews and analysis.

Use External Facilitators to Help Generate Ideas

Iowa Hosts Three-Day Symposium to Solve the Opioid Crisis

The University of Iowa

Opioids Ideas Lab

Research office partnered with external organization to convene a multidisciplinary group of faculty experts for three days to examine the opioid crisis and collaboratively generate solutions.

Day 1
Build Rapport

- Get to know participant expertise and backgrounds
- Engage in team building activities
- Discuss specific topics and explain key program objectives

Day 2
Redefine & Iterate

- Redefine research problems from varying perspectives
- Form interdisciplinary research teams
- Generate innovative ideas and outline preliminary proposals

Day 3
Presentations

- Present proposals to competing teams and leadership
- Collaboratively use peer feedback process
- Incorporate critiques into proposal plans and development

Outcomes

4 Collaborative team projects emerged related to opioid crisis

2 Extramural research grants won as result of program

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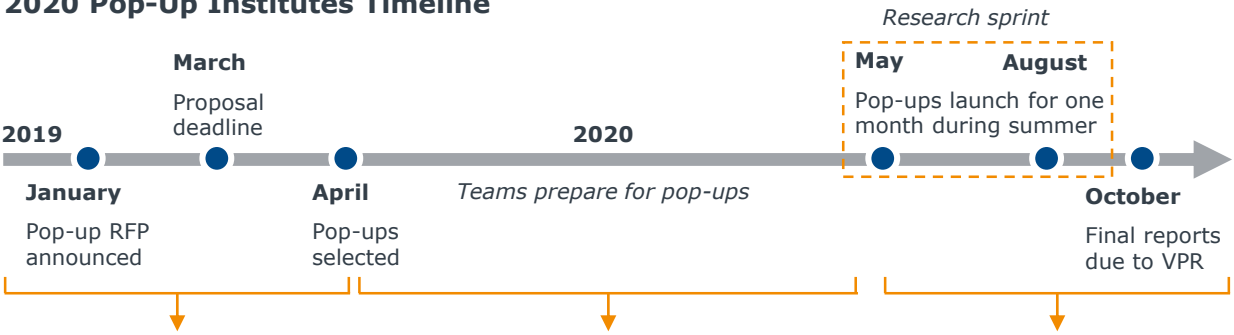
Source: Knowinnovation, Ideas Labs; University of Iowa, Opioid Ideas Lab; EAB interviews and analysis.

Temporary Locations, Permanent Collaborations

UT Austin Establishes Pop-Up Institutes to Rally Faculty

TEXAS
The University of Texas at Austin

2020 Pop-Up Institutes Timeline



Proposal Development

Research teams submit proposals for short-term centers designed to provide structure and support for rapid team formation and productivity. Proposals include abstracts, budgets, and letters of time commitment.

Pop-Up Preparation

Research office provides funding (maximum $50,000) and admin support for up to three pop-up institutes per year. Selected teams spend a year preparing for a burst of research activity. They must work with the research office to finalize program work plans and logistics.

Sample 2020 Pop-Up Institute

- Creating Inclusivity and Improving Outcomes for Sexual and Gender-Diverse People

Launch & Reporting

Each pop-up spends one month conducting high intensity research in preparation for a larger future research initiative. This timescale is longer than a workshop or conference but shorter than the creation of a permanent research structure.

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Source: University of Texas at Austin, Pop- Up Institutes; EAB interviews and analysis.

Even a Well-Crewed Ship Strays Without a Captain

CROs Struggle to Find Suitable Faculty Leaders for L&C Projects

Importance of Faculty Leaders for L&C Awards

- ✓ Provide credibility through their disciplinary reputation and funding track record
- ✓ Help build research teams using networks and connections
- ✓ Manage varying scientific perspectives using their content expertise
- ✓ Bridge communication gaps between research office and faculty research team

Challenges of Finding Equipped Leaders

- x Research offices are unclear on which factors to consider when identifying leaders
- x Faculty are not recognized or rewarded for developing leadership skillset
- x Existing leadership trainings fail to address L&C proposal management
- x Faculty resist research office directives

Opportunities for CROs

Use quantitative and qualitative data to identify faculty best positioned to lead L&C research teams

Develop trainings specifically for faculty leading L&C research teams

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Source: EAB interviews and analysis.

Filtering the Pool of Prospective Leaders

Funding Credibility

Faculty must have successful funding track record for sponsoring agencies to view them as credible leaders.

Key Indicators:

- Total sponsored research funding (by relevant agency)
- Number of awards (by size and complexity)
- Number of times served as a lead or co-PI
- Number of co-authored publications
- Reputation and name recognition

Interest Level

Faculty must be willing to invest time and effort required to lead a collaborative team.

Key Indicators:

- Time and capacity
- Number of postdoc and graduate students advised
- Internal leadership positions (within department, college, center, institute)
- External leadership positions (within professional associations and agencies)
- Engagement with research office

Personal Attributes

Faculty must possess the skills and disposition needed to effectively lead research teams.

Key Indicators:

- Personal disposition
- Networks and connections to other researchers, institutions, partners
- Communication skills
- Management skills

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Source: EAB interviews and analysis.

Building Research Leadership Capacity

Purdue's FLAIR Program Provides Targeted Research Leadership Training

Faculty Leadership Academy for Interdisciplinary Research (FLAIR) Program Focus

Foundational Leadership Skills in Research Context

- ✓ Team assembly
- ✓ Communication and media use
- ✓ Group dynamics
- ✓ Vision setting
- ✓ Time management
- ✓ Conflict resolution

Targeted Skills Needed For Leaders Of Large and Interdisciplinary Research Teams

- ✓ Federal agency knowledge
- ✓ Complex RFP analysis
- ✓ Budget and funding strategy
- ✓ Coalition building
- ✓ Outreach and engagement
- ✓ Complex proposal development

Program Details

PURDUE UNIVERSITY

Agenda Creation

Selected agenda topics based on gaps in current programs and personal knowledge of VPR, research staff, and past leaders of large research teams

Application Process

Received 24 completed applications (each included a one-page statement of interest, a one-page description of research, and a CV)

Fellow Selection

Chose a diverse cohort of 12 associate and full professors from across a broad range of disciplines and colleges

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Source: Purdue University, FLAIR Program; EAB interviews and analysis.

FLAIR Training Agenda

PURDUE UNIVERSITY

2019 FLAIR Sessions

All sessions are Mondays, 1:30-3:30pm
ME 2180, SCHL B038, GRIS 10

Session 1 – Marching in the Same Direction: Forming Large, Interdisciplinary Centers and Institutes

Panel:
- Director of Center for Plant Biology
- Director of Institute for Global Security and Defense Innovation
- Former Director of Purdue Institute for Integrative Neuroscience

Sub-Topics:
- Garnering faculty interest with limited resources
- Balancing inclusion with focus
- Organizational structure
- Campus outreach, partnering, and bridge building
- Generate a sustainable funding strategy

Bi-weekly sessions with consistent time and place

Sessions are 2 hours: 1 hour for expert presentations and 1 hour for Q&A

Panel includes variety of speakers with real-world experience leading interdisciplinary teams

Topics are broadly focused, but panelists are given a list of potential sub-topics

Results

Program averaged 80% fellow attendance per session and has built strong reputation across campus

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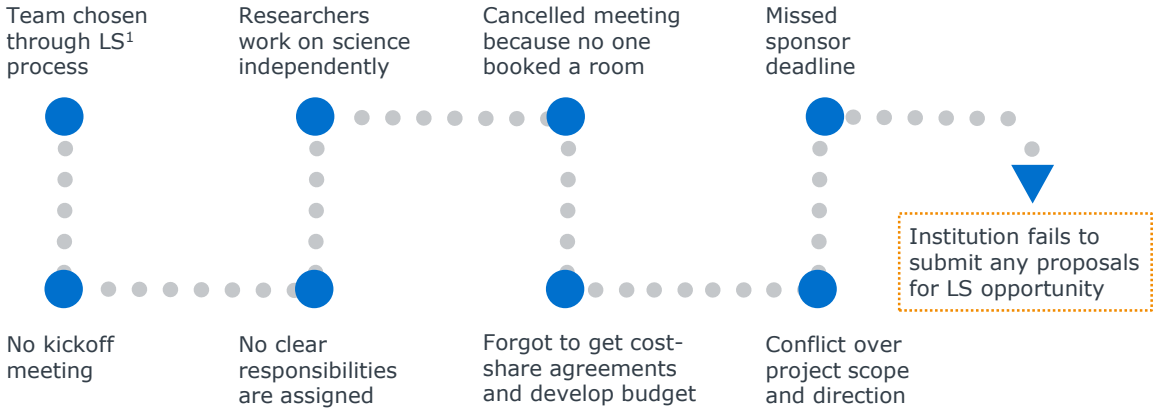
Source: Purdue University, FLAIR Program; EAB interviews and analysis.

When the Ball Gets Dropped

Faculty Tend to Prioritize Science over Administrative Requirements

Common Failure Points in Coordinating Team Proposals



Research Project Management Resources

- Self-Service Toolkit
- Ad Hoc Support Team
- Dedicated Project Manager

1) Limited submission.

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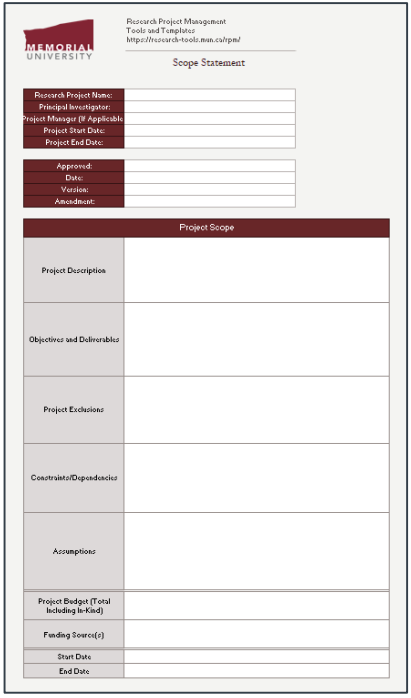
Source: EAB interviews and analysis.

Build a Repository of Self-Service Tools

Memorial Translates Project Management Principles to Research Context

RPM[1] Tools	Purpose
Intro to RPM[1] Guide and Video	Educate researchers on purpose of RPM, key processes, and tools
Project Scope Template and User Guide	Develop high-level project overview that includes objectives, deliverables, and activities
Project Schedule Template and User Guide	Create timeline and visual representation of milestones with workload descriptions
Project Budget Template and User Guide	Build financial plan by anticipating direct costs, F&A costs, and funding sources
Risk Register Template and User Guide	Identify and proactively manage project risks after quantifying probability and potential impact
Roles and Responsibilities Template and User Guide	Clarify team member roles and responsibilities, along with accountability mechanisms
Stakeholder Communication Template	Create communication strategy for project stakeholders

Project Scope Template


MEMORIAL UNIVERSITY

Research Project Management
Tools and Templates
https://research-tools.mun.ca/rpm/

Scope Statement

Research Project Name:	
Principal Investigator:	
Project Manager (If Applicable):	
Project Start Date:	
Project End Date:	
Approved:	
Date:	
Version:	
Amendment:	

Project Scope	
Project Description	
Objectives and Deliverables	
Project Exclusions	
Constraints/Dependencies	
Assumptions	
Project Budget (Total Including In-Kind)	
Funding Source(s)	
Start Date	
End Date	

1) Research project management.

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Source: Memorial University of Newfoundland, Research Project Management Templates; EAB interviews and analysis.

Calling In the Rapid-Response Team

Research Staff Deployed for Short Term Proposal Development

University of Central Florida's "REACT" Approach

UNIVERSITY OF CENTRAL FLORIDA

R — Rapid Response
Determine availability and capacity to support teams pursuing L&C opportunities

E — Evaluate
Review RFP guidelines and determine needs (e.g., samples, templates)

A — Assist Faculty
Help with non-technical elements (e.g., biosketches, letters of collaboration, budgets)

C — Coordinate
Monitor project progress and liaise with collaborators

T — Track
Manage revisions and finalization—then document lessons learned

Tap Existing Staff to Support Faculty
Research development leaders assess availability and expertise of staff in their own unit, the broader research office, and cross-campus units (as needed) to form an ad hoc REACT support team.

Deploy On Case-By-Case Basis
Research development team does not require minimum award dollar amount to be eligible for REACT services, but they assess the complexity of projects seeking REACT support based on the number of PIs, types of disciplines represented, and potential impact.

Provide PM training for research staff to increase potential pool of people who can support L&C faculty teams.

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Source: University of Central Florida, REACT Program; EAB interviews and analysis.

Invest in Dedicated Project Management (PM) Staff

Advantages of Dedicated PM Staff

Specialized Expertise

All PMs[1] are trained and certified to manage complex projects—those with university research experience can provide more targeted support for managing L&C proposals and awards.

Staff Capacity Planning

Dedicated PMs for L&C proposal development can allow other research office staff to reclaim time and prioritize other activities.

Assessment and Evaluation

PMs regularly capture and analyze process data that can be used to identify and address service gaps experienced by faculty.

SFU SIMON FRASER UNIVERSITY

Case in Brief: Simon Fraser University

- Hiring one-off PMs in the greater Vancouver area was too expensive due to high demand and salary expectations
- Office of Institutional Strategic Awards created team of 7 dedicated research PMs to deploy against L&C opportunities
- PMs serve as liaisons between research team, funding agencies, partnering institutions, and administrative units
- PMs spend time:
  - Facilitating communication
  - Developing project schedules
  - Coordinating proposal development
  - Ensuring budget and RFP compliance
- Faculty can use existing grant funding to buyout PM time, which helps research office cover PM staffing costs

1) Project managers.

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Source: Simon Fraser University, Research Project Managers; EAB interviews and analysis.

Upgrade Proposal Development Services to Improve Submission Quality

- Tactic 7: Proactive Proposal Interventions
- Tactic 8: Proposal Reapproach Support

IV

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If Everyone's Good at Science, How Do We Win?

Non-Technical Factors Are Key Differentiators for L&C Proposals

> **Reviewers are looking for any reason to reject without review**. Even something as seemingly small as a formatting error or going one sentence over the page limit can stop the reviewer from even reading the proposal. And you do not want to see all this effort go into a proposal only for it to be returned without review. That's more of a failure than actually losing because it's something we have complete control over."

Director of Research Development, Public R1 Institution

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Source: EAB interviews and analysis.

1. Establish Tiered Notification Policy

Require Earlier Notification of Intent to Submit for L&C Awards

Advantages for Faculty

- Low barrier to entry (e.g., email research office)
- Research office is responsible for initiating follow-up
- Helps them access full range of proposal resources and support

Advantages for Staff

- Improved workflow planning
- Early identification of faculty interest and teams
- Can intervene earlier during proposal development

Establishing a Tiered Notification Policy

Institutions customize notification deadlines based on proposal type and specific opportunity requirements.

	University of South Florida	University of California San Francisco
Standard Solicitations (e.g., R01, R21, individual investigator)	3 to 5-day notification	30-day notification
L&C Solicitations (e.g., center grants, P01, U54)	45-day notification	4 to 6-month notification
Other Solicitations (campus-specific)	Mandatory Cost Share; 30-day notification	Subcontracts or International; 60-day notification

Source: University of California, San Francisco, Submission Policy; University of Southern Florida, Submission Policy and Large, Interdisciplinary, or Otherwise Complex Proposals Policy; EAB interviews and analysis.

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2. Build Repository of L&C Templates and Examples

Share Previously Submitted L&C Proposals to Kickstart Writing Process

Templates for Non-Technical Components of L&C Proposals

Research offices should provide:

- ✓ Broader impacts
- ✓ Data management plan
- ✓ Letters of support or collaboration
- ✓ Leadership plan
- ✓ Third-party contribution
- ✓ Complex budget
- ✓ Grad/postdoc mentoring plan

How to Obtain Real-World Examples of L&C Proposals

Access submissions through sponsored programs/eRA

Request faculty "donate" prior submissions

Encourage limited submission teams and internal seed funding recipients to share their final submissions

Submit a Freedom of Information Act (FOIA) request to federal agency (not peer institution)

Appalachian State University created a web page with info on available sample proposals and directions for how to obtain copies.

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Source: Appalachian State University, Sample Proposals; EAB interviews and analysis.

3. Coordinate Targeted Proposal Reviews

Use Proposal Reviews to Provide Feedback, Address Common Problems

Types of Reviews

Review Type	Problem Addressed
Blue Team reviews initial capture plan with focus on win strategy	Overarching strategy is not agreed upon before proposal development
Black Hat Team predicts competitors' solutions to help inform proposal strategy	Teams write proposals without considering how to distinguish themselves from competitors
Pink Team reviews outline or early sections to check pre-writing strategy and identify lingering gaps	Teams draft full proposals without first ensuring their writing strategy is sound
Green Team reviews budgets and pricing	Budgets for L&C proposals are highly complex and often involve cost-sharing and matching funds
Red Team reviews fully drafted proposal to simulate the funder evaluation process	Teams overlook shortcomings and biases by failing to assess proposals from an outsider perspective
Gold Team reviews and approves final proposal	Feedback and edits from red team review are not implemented before submission
White Glove reviews final proposal to identify imperfections in formatting, graphics, printing	Teams and reviewers focus more on content than aesthetics, so submissions still have simple visual errors

Pink Team

Lessons Learned:

- ✓ *Do not wait for full draft—pull forward strategy conversations*
- ✓ *Include range of experts (e.g., technical, proposal, management)*

Red Team

Lessons Learned:

- ✓ *Establish incentives for reviewers*
- ✓ *Weigh pros and cons of standing versus ad hoc review committees*
- ✓ *Consider potential conflicts of interest*
- ✓ *Facilitate feedback sessions post-review*

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Source: Shipley Associates; EAB interviews and analysis.

4. Provide Graphic Support and Resources

Leverage Existing Graphic Resources, Build New Capacity As Needed

Potential Graphic Support Providers

Source	Expertise	Cost
External consultants	★ ★ ★	$$$
Research communications team/staff	★ ★ ★	$
Campus communication team/staff	★ ★	$$
On-campus centers (e.g., communication, data visualization, statistics)	★ ★	$$
Graduate students and postdocs	★	$
Undergraduates	★	$

Key

★★★ : High Expertise	$$$: High Cost
★★ : Moderate Expertise	$$: Moderate Cost
★ : Low Expertise	$: Low Cost

Forging strong relationships with campus partners can help reduce potential costs

Self-Service Resources

Training

Example: Texas Tech University

Graphic repository

Example: Penn State University

Logos and icons

Example: University of North Carolina at Chapel Hill

Source: Penn State University, Proposal Graphics Gallery; Texas Tech, Communication Training Center; University of North Carolina at Chapel Hill, Research Iconography & Pattern; EAB interviews and analysis.

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5. Revamp Limited Submission Policy and Process

Internal Process Poses Challenges, But Also Opportunities

Common Stakeholder Frustrations		Overlooked Benefits of LS[1] Process
Faculty	"I don't understand why the research office is making me jump through **a bunch of extra hurdles for no reason**."	Provides faculty with constructive peer feedback they can use to enhance their competitiveness for the LS opportunity or future awards
Staff	"**Coordinating the process takes a ton of time.** Faculty rarely meet the deadlines and never want to serve as reviewers."	Helps staff gain insight into faculty interests and prioritize how to deploy resources and services
CRO	"There is an immense amount of pressure on me to **pick the right team**—and I don't feel equipped to do so."	Allows CROs and research office to directly execute on strategy by making informed go/no-go decisions

Coming Soon: Limited Submissions Policy Audit

Research offices audit their current policy to identify shortcomings and receive recommendations for process improvements.

1) Limited submission.

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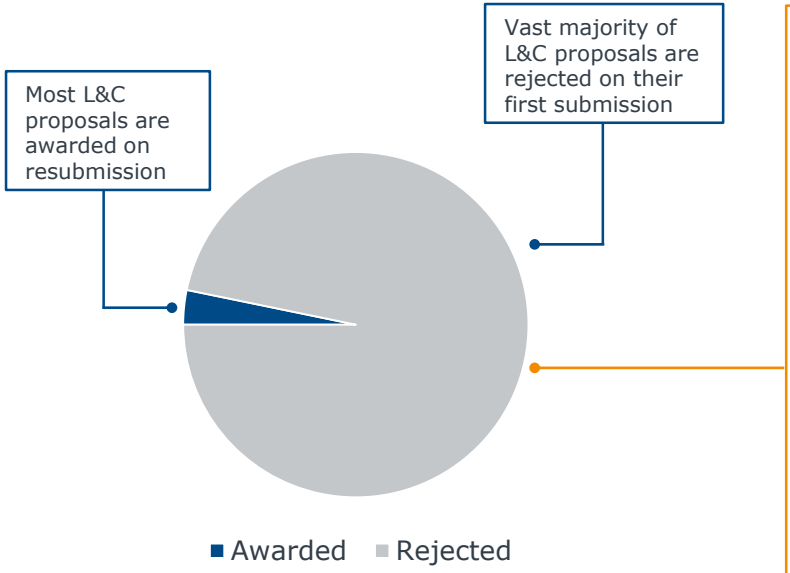
Source: EAB interviews and analysis.

Rejection Can Be Another Step Toward Success

Likelihood of Success for L&C Proposals



Sample Investment Made in Rejected L&C Proposal

Time
18 months

Staff
2.5 FTEs

Faculty
15 researchers

Resources
Lab access, equipment

Money
$50,000 total for seed funding, external review, and graphic support

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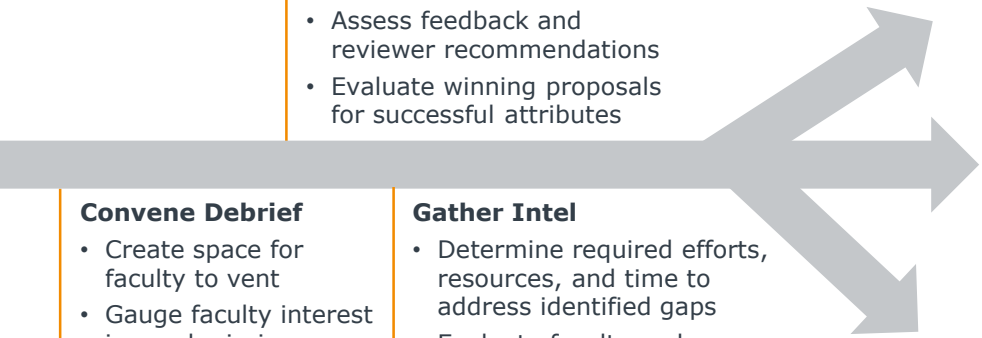
Source: EAB interviews and analysis.

Creating a Postmortem Playbook for Rejection

How CROs Can Make the Most of Resources Already Spent on Proposal Development



Review Proposal

- Assess feedback and reviewer recommendations
- Evaluate winning proposals for successful attributes

Convene Debrief

- Create space for faculty to vent
- Gauge faculty interest in resubmission

Gather Intel

- Determine required efforts, resources, and time to address identified gaps
- Evaluate faculty and research staff capacity

Resubmit

Address weaknesses in rejected proposal and submit to the next cycle of the same funding opportunity

Repurpose

Modify current proposal as needed so that it is competitive for a new extramural opportunity

Archive

Save rejected proposal in repository to use as a sample for training and future proposal development

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Source: EAB interviews and analysis.

Reengaging Faculty After Rejection

Research Staff Streamlines Resubmission Process

Gather info on funder resubmission policies and processes

Analyze reviewer feedback and proposal recommendations

Conduct opportunity searches for alternative funding sources

Manage resubmission or repurposing timeline and coordination

Research Office Provides Funding for Resubmission Costs

- Pilot data and hypothesis testing
- Equipment, supplies, and lab access
- Graphics and editing support

University of Nevada, Reno

Case in Brief: University of Nevada, Reno

- Research Enhancement Grants allocate $50,000/year in funding to help 2-3 faculty proposals improve and resubmit proposals to a federal agency
- Applications for funding must include:
  - Action plan addressing reviewer feedback
  - Budget and justification for funding
  - Rationale for likelihood of proposal acceptance
- Application must be forwarded with recommendation from the PI's dean

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Source: University of Nevada, Reno, Research Enhancement Grants; EAB interviews and analysis.

A Success Story

> “Going after these large and complex team awards is tough—there’s no doubt about it. But with the right support from the research office, we can free up PIs to focus on their research. And ultimately that’s the best thing for them, the best way forward for growing the research enterprise, and the best way to help solve real-world problems.”

Lead PI on Successful Center Proposal
Former Vice President for Research,
Public R1 Institution

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Source: EAB interviews and analysis.

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