Expediting the Shift Toward Strategic Research Development

Eight Tactics to Increase Competitiveness for Large and Complex Federal Opportunities

University Research Forum
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.”

Remembering the Good Old Days

Four Pillars of “The Strategy of Having No Real Strategy”

A+

Pursue Every Opportunity

Approach Each Opportunity the Same Way

Ignore Competitor Strengths and Strategies

Assume Faculty Can Go It Alone

Assumption:
“We can be excellent at all kinds of research and in all disciplines. So we should treat all opportunities equally.”

Assumption:
“Our historic approach to competing for dollars has served us this long. No need to reinvent the wheel.”

Assumption:
“We shouldn’t waste time evaluating our competitors—since we can’t control what they do, it won’t help our success rates.”

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

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

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
- P1 and U2 Grants, including Cooperative Research Centers and Alcohol Research Centers

Department of Energy
- Engineering Frontier Research Centers

Department of Defense
- University Affiliated Research Centers

Tri-Council
- New Frontiers in Research Fund

Source: EAB interviews and analysis.

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

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

- **Administrative Capacity**
  Helps institutions gain experience and credibility as responsible administrators

- **Innovation Impact**
  Paves the way to create innovative new disciplines, methods, and curriculum

- **Reputational Impact**
  Increases opportunities for media attention and prestige—and for more researchers

- **Relationship Building**
  Facilitates formation and strengthening of relationships with partners, agencies

- **Future Positioning**
  Increases institutional competitiveness for future awards

Source: EAB interviews and analysis.
### A Rocky Road

**Three Potential Pitfalls in Journey to Grow the Research Enterprise**

<table>
<thead>
<tr>
<th>Pitfall</th>
<th>1. Overly reliant on individual investigator awards</th>
<th>2. Laissez-faire approach to team formation, support</th>
<th>3. Reactive approach to L&amp;C awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer funding opportunities, smaller dollars</td>
<td>Increased faculty burden and frustration</td>
<td>Increased faculty and admin burden</td>
<td></td>
</tr>
<tr>
<td>Missed out on L&amp;C reputational benefits, infrastructure</td>
<td>Reduced leadership and engagement pools</td>
<td>Suboptimal team formation and development</td>
<td></td>
</tr>
<tr>
<td>Failed to build capacity to compete in the future</td>
<td>Less competitive teams; Lower quality submissions</td>
<td>Insufficient time for planning and positioning</td>
<td></td>
</tr>
<tr>
<td>Locked out of federal funding; Reliant on alternative sources</td>
<td>Damaged reputation; Poor success rates</td>
<td>Last-minute proposals; Poor success rates</td>
<td></td>
</tr>
</tbody>
</table>

**Stagnated Research Expenditures**

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

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?
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

Source: EAB interviews and analysis.
Use Data and Analytics to Drive Research Strategy

- Tactic 1: Competitive Intelligence Analyses
Lack of Data, Analyses Results in Research Office Deferring Strategy to Faculty

**Overwhelmed by Indecision**

- Unsure about institution’s unique disciplinary strengths
- Lacking inventory of institutional assets (e.g., equipment, labs)
- Not sure about funding track record with federal agencies
- Not up-to-date on agency trends or priorities
- Unsure about whether or how to identify competitors

- Unaware of emerging areas of collaboration with funding potential
- Have not captured info on faculty networks and connections to funders or other institutions
- Reluctant to identify areas of research underperformance
- Unaware of upcoming opportunities or their requirements
- Cannot gauge competitiveness for specific opportunities

Source: EAB interviews and analysis.
Tactic 1: Competitive Intelligence Analyses

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

Analyses for Developing Your Research Strategy

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

Craft Strategy to Target Best-Fit L&C Opportunities

Corresponding Case Studies:

- The University of New Mexico
- The University of Arizona
- Arizona State University

Source: EAB interviews and analysis.
Keep Your Eye on the Prize

Analyses Drive Decisions About Pursuing L&C Awards

Conduct Competitive Intelligence Analyses

Decide Not to Pursue L&C Opportunity

Proceed as Lead Institution

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

Decide to Pursue L&C Opportunity

Proceed as Partner Institution

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

Proceed as Lead and Partner

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

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

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

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 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

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.

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.
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.

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

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**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)

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### University of New Mexico’s Distinctive Research Strengths

- Only flagship in the country that is also a Hispanic Serving Institution
- Research expertise related to the southwest, renewable energy, and “water in the west” aligns with local, state, and national research priorities
- Strengths in materials, nano-science, optics, and computation
- Leader in research focused on social and economic well-being of minority populations

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### Weaknesses and Challenges

- Research is strong but not well-known outside the institution
- Lack of adequate infrastructure to take research to next level
- Insufficient support for interdisciplinary research
- Lack of integration in research community outside STEM fields

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1) Air Force Research Laboratory.

Source: University of New Mexico, [Research Strategic Plan Working Group Reports](https://example.com); 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

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)

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.

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)

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

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2) American Association for the Advancement of Science.
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

Used results to identify team gaps and strengthen alignment with sponsor and solicitation

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

Connected faculty member with additional contacts to help form collaborative team

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

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.

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, 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.

Source: EAB interviews and analysis.
Using Data to Analyze the Competitive Landscape

Research Office Should Leverage Faculty and Qualitative Insights

Data Sources

- HERD¹
- Publication and citation databases
- Agency databases
- Opportunity-specific websites
- International and national rankings
- Research network vendor tools
- Faculty, deans, ADRs², department chairs
- Institutional websites and strategic plans
- Media announcements and social media
- Professional conferences
- Faculty CVs, biosketches, websites

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.

Source: EAB interviews and analysis.
ASU Uses Multiple Methods to Identify Competitors, Determine Strategy

Approaches to Identifying Potential Competitors

### 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

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\(^1\) Higher Education Research and Development Survey.

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Source: Arizona State University, Competitive Intelligence; EAB interviews and analysis.
Conducting Competitive Intelligence Analyses for UConn
From Theory to Practice

Applying Competitive Intelligence Analyses at UConn

**Self-Analysis**

- **Funding Portfolio Data**
  EAB benchmarks funding portfolio against peers.

- **State Environmental Scan**
  EAB provides snapshot of state and local funding for research.

**Opportunity Analysis**

- **Strengths Alignment with Funder Priorities**
  EAB analyzes and contextualizes performance in strength areas with federal funding trends.

**Competitor/Collaborator Analysis**

- **Strengths Landscape Assessment**
  EAB identifies institutions with similar articulated strengths and priorities.

**Craft Strategy to Target Best-Fit L&C Opportunities**

**Proposal and Award Data**

EAB analyzes historic data to determine success rates and identify school- and department-level trends.

**Strengths Differentiation**

EAB provides framework for deepening understanding of articulated strength areas.

Source: EAB interviews and analysis.
Self-Analysis

Analyzing the Funding Portfolio

UConn Research Expenditures
By Funding Source in Millions (FY17)

Larger proportion of portfolio than peer institutions, whose federal funding averages 43% of their total portfolio

Smaller proportion of portfolio than peer institutions, whose institutional funding averages 34% of their total portfolio

On par with peer institutions

Source: HERD FY2017, Table 21; EAB interviews and analysis.
## Self-Analysis

### Conducting an Environmental Scan

#### Connecticut in Context

<table>
<thead>
<tr>
<th>Institution</th>
<th>Percent of State Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. Connecticut</td>
<td>70.4%</td>
</tr>
<tr>
<td>Yale U.</td>
<td>15.4%</td>
</tr>
<tr>
<td>Wesleyan U.</td>
<td>5.1%</td>
</tr>
<tr>
<td>Central Connecticut State U.</td>
<td>3.9%</td>
</tr>
<tr>
<td>U. New Haven</td>
<td>2.8%</td>
</tr>
<tr>
<td>All Others</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Total funding by state and local sources (FY2017)

**$9.6M**

National ranking for state investment (FY2017)

46th
Recent Enterprise Growth

**UConn Proposals and Award Numbers**

*Total Number, By Campus (FY18)*

- **5%** Decrease in proposal number from FY17
- **13%** Increase in award number from FY17

**UConn Proposals and Award Values**

*Total Dollars in Millions, By Campus (FY18)*

- **2%** Increase in proposal dollars from FY17
- **40%** Increase in award dollars from FY17

Source: University of Connecticut, Storrs, CT; EAB interviews and analysis.
**Success Rates Headed the Right Direction**

**UConn Proposal Success Rates**
*By Campus and Overall (FY17-FY18)*

<table>
<thead>
<tr>
<th></th>
<th>FY17</th>
<th>FY18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storrs</td>
<td>34.0%</td>
<td>36.4%</td>
</tr>
<tr>
<td>Health</td>
<td>20.3%</td>
<td>32.9%</td>
</tr>
<tr>
<td>Overall</td>
<td>29.8%</td>
<td>35.4%</td>
</tr>
</tbody>
</table>

**Key Takeaways**

1. **Units that previously had submitted and won few, if any, proposals found success.**
   These included units like Family Medicine and Traumatology at UConn Health and Nursing and Social Work at Storrs.

2. **Increased success rates in units with a history of high activity were key contributors.**
   UConn Health saw double-digit increases in Genetics and Developmental Biology, Medicine, and Neuroscience. At Storrs, A&S, Engineering, Pharmacy, and Education also saw increased success.

Source: University of Connecticut, Storrs, CT; EAB interviews and analysis.
### Notable Success Statistics for Five Schools at UConn

<table>
<thead>
<tr>
<th></th>
<th>Liberal A&amp;S</th>
<th>Nursing</th>
<th>Pharmacy</th>
<th>Social Work</th>
<th>Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percent increase in</strong></td>
<td>10%</td>
<td>75%</td>
<td>100%</td>
<td>63%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>awards won (FY17-FY18)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Percentage point increase in success rate (FY17-FY18)</strong></td>
<td>4 percentage points</td>
<td>10 percentage points</td>
<td>5 percentage points</td>
<td>7 percentage points</td>
<td>15 percentage points</td>
</tr>
<tr>
<td><strong>Increase in award dollars (FY17-FY18)</strong></td>
<td>$19M</td>
<td>$11M</td>
<td>$2.9M</td>
<td>$7.5M</td>
<td>$43M</td>
</tr>
<tr>
<td><strong>Percent increase in award dollars (FY17-FY18)</strong></td>
<td>44%</td>
<td>550%</td>
<td>207%</td>
<td>750%</td>
<td>94%</td>
</tr>
</tbody>
</table>
**UConn Departments with Noteworthy Increases in Awards (FY17-FY18)**

- Marine Sciences
- Ecology and Evolutionary Biology
- Allied Health Science
- Community Health and Medicine
- Genetics and Developmental Biology
- Physiology and Neurobiology
- Psychological Sciences
- Neuroscience

**Award Trends for UConn’s School of Engineering (FY17-FY18)**

When contextualized with historic data, recent declines in funding are less noteworthy.

For example, FY18 declines in departments like Electrical and Computer Engineering and Materials Science and Engineering appeared more drastic because of spikes in funding in FY17.

Many department experienced moderate increases that kept them on a steady growth trajectory.

These units Computer Science and Engineering and Biomedical Engineering.
UConn Strength Areas

- Genomics
- Materials
- Energy
- Manufacturing
- Cyber
- Health Behavior
- Neuroscience

Questions to Consider

1. **What are our personnel-related advantages?**
   - Unique competencies
   - Management expertise
   - Publication and citation track record
   - Funding track record

2. **What are our technological advantages?**
   - Novel technical approach
   - One-of-a-kind instrumentation
   - Access to rare equipment

3. **What are our institutional advantages?**
   - Unique facilities
   - Institutional investment
   - Academic programs
   - Designations

4. **What are our regional advantages?**
   - Community partners
   - Climate and environment
   - Geographic proximity

Source: University of Connecticut, Storrs, CT; EAB interviews and analysis.
Opportunity Analysis

Research Strength: Genomics

UConn Genomics Research Expenditures
New Awards (FY15-FY19) in Millions

Key Takeaways

~71%
Increase in dollars between FY15-FY19

~14%
Average annual growth rate between FY15-FY19

3.4%
Increase in funding for NIH’s National Human Genome Research Institute between FY18-FY19

Source: University of Connecticut, Storrs, CT; National Human Genome Research Institute, Budget and Financial Information; EAB interviews and analysis.
Opportunity Analysis

Research Strength: Materials

UConn Materials Research Expenditures
New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Storrs</th>
<th>UConn Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$11.8</td>
<td>$4.3</td>
</tr>
<tr>
<td>2016</td>
<td>$15.5</td>
<td>$0.2</td>
</tr>
<tr>
<td>2017</td>
<td>$15.7</td>
<td>$0.1</td>
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<tr>
<td>2018</td>
<td>$7.7</td>
<td>$0.2</td>
</tr>
<tr>
<td>2019</td>
<td>$18.7</td>
<td>$0.7</td>
</tr>
</tbody>
</table>

Funding Growth

〜20%
Increase in dollars between FY15-FY19

〜4%
Average annual growth rate between FY15-FY19

-18.8%
Decrease in funding for NSF’s Division of Materials Research since FY18

16.4%
Increase in funding for NSF Materials Centers since FY18

Source: University of Connecticut, Storrs, CT; EAB interviews and analysis; NSF FY2020 Mathematical and Physical Sciences Directorate.
Opportunity Analysis

Research Strength: Energy

UConn Energy Research Expenditures
New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Storrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$11.8</td>
</tr>
<tr>
<td>2016</td>
<td>$17.0</td>
</tr>
<tr>
<td>2017</td>
<td>$12.4</td>
</tr>
<tr>
<td>2018</td>
<td>$10.4</td>
</tr>
<tr>
<td>2019</td>
<td>$20.0</td>
</tr>
</tbody>
</table>

Funding Growth

- ~70% Increase in dollars between FY15-FY19
- ~14% Average annual growth rate between FY15-FY19
- ~4% Increase in DOE appropriations between FY19-FY20
- ~6% Increase in appropriations for DOE’s Office of Science between FY19-FY20

Source: University of Connecticut, Storrs, CT; House Committee on Appropriations; EAB interviews and analysis.
Opportunity Analysis

Research Strength: Manufacturing

UConn Manufacturing Research Expenditures
New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Storrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$3.2</td>
</tr>
<tr>
<td>2016</td>
<td>$4.5</td>
</tr>
<tr>
<td>2017</td>
<td>$5.0</td>
</tr>
<tr>
<td>2018</td>
<td>$8.1</td>
</tr>
<tr>
<td>2019</td>
<td>$11.4</td>
</tr>
</tbody>
</table>

Funding Growth

~261% Increase in dollars between FY15-FY19

~52% Average annual growth rate between FY15-FY19

$268M NSF’s proposed FY20 investment in advanced manufacturing

0% Growth in NIST’s investment in Manufacturing USA between FY18-FY19

Source: University of Connecticut, Storrs, CT; NIST Appropriations; NSF FY2020 Budget Request; EAB interviews and analysis.
Research Strength: Cybersecurity

UConn Cybersecurity Research Expenditures
New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Storrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$5.2</td>
</tr>
<tr>
<td>2016</td>
<td>$4.2</td>
</tr>
<tr>
<td>2017</td>
<td>$2.9</td>
</tr>
<tr>
<td>2018</td>
<td>$4.1</td>
</tr>
<tr>
<td>2019</td>
<td>$8.2</td>
</tr>
</tbody>
</table>

Funding Growth

- ~62% Increase in dollars between FY15-FY19
- ~12% Average annual growth rate between FY15-FY19
- ~2% Increase in funding for NSF’s Computer and Information Science and Engineering Directorate between FY18-FY19

$96.2M
Proposed NSF investment in cybersecurity and privacy in FY20

Source: University of Connecticut, Storrs, CT; House Committee on Appropriations; EAB interviews and analysis.
UConn Health Behavior Research Expenditures

New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Storrs</th>
<th>UConn Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$25.3</td>
<td>$30.0</td>
</tr>
<tr>
<td>2016</td>
<td>$29.9</td>
<td>$48.7</td>
</tr>
<tr>
<td>2017</td>
<td>$25.5</td>
<td>$27.7</td>
</tr>
<tr>
<td>2018</td>
<td>$42.6</td>
<td>$28.6</td>
</tr>
<tr>
<td>2019</td>
<td>$34.1</td>
<td>$25.6</td>
</tr>
</tbody>
</table>

**Funding Growth**

- **~8%**
  - Increase in dollars between FY15-FY19

- **~1.6%**
  - Annual growth rate between FY15-FY19

- **~8%**
  - Increase in funding for NIMH’s Neuroscience and Basic Behavioral Science Research between FY18-FY19

Source: University of Connecticut, Storrs, CT; [NIMH FY200 Budget](#); EAB interviews and analysis.
Opportunity Analysis

Research Strength: Neuroscience

UConn Neuroscience Research Expenditures

New Awards (FY15-FY19) in Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (in Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$11.8</td>
</tr>
<tr>
<td>2016</td>
<td>$17.0</td>
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</tr>
<tr>
<td>2018</td>
<td>$10.4</td>
</tr>
<tr>
<td>2019</td>
<td>$20.0</td>
</tr>
</tbody>
</table>

Funding Growth

- **~70%**
  Increase in dollars between FY15-FY19

- **~14%**
  Annual growth rate between FY15-FY19

- **3.9%**
  Increase in NINDS appropriations between FY18-19

- **5.5%**
  Percentage of NINDS budget dedicated to the BRAIN Initiative in FY19

Source: University of Connecticut, Storrs, CT; [NINDS Funding Strategy FY 2019](https://www.ninds.nih.gov/FundingStrategyFY2019); EAB interviews and analysis.
## Competitor/Collaborator Analysis

### A Crowded Playing Field

Contextualizing UConn’s Strengths in the Competitive Landscape

<table>
<thead>
<tr>
<th>UConn Strength Areas</th>
<th>Competitors with Similar Identified Strengths and Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genomics</td>
<td>University of Utah, Indiana University Bloomington, Iowa State University, University of Minnesota</td>
</tr>
<tr>
<td>Materials Science</td>
<td>University of Nebraska, University of South Carolina, Ohio State University, LSU, University of Minnesota</td>
</tr>
<tr>
<td>Energy</td>
<td>University of Minnesota, University of Kentucky, University of Kansas, University of South Carolina</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>LSU, Penn State, Clemson University, Ohio State University</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>George Washington University, Virginia Tech, Indiana University Bloomington</td>
</tr>
<tr>
<td>Health Behavior</td>
<td>Penn, University of Maryland</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>University of Utah, University of Cincinnati, University of Kentucky</td>
</tr>
</tbody>
</table>

Source: EAB interviews and analysis.
### Contextualizing UConn’s Recent Major Awards

#### Differences in Scale

<table>
<thead>
<tr>
<th>L&amp;C Grants at UConn</th>
<th>L&amp;C Grants at Peer Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$11M</strong> Cooperative Research Center – Syphilis Vaccine (NIAD)</td>
<td><strong>$140M</strong> Frontier Observatory for Research in Geothermal Energy (DOE)</td>
</tr>
<tr>
<td><strong>$10M</strong> Transportation Safety Research Center (CT DOT)</td>
<td><strong>$87M</strong> HEAL Grant (NIH)</td>
</tr>
<tr>
<td><strong>$10M</strong> U.S. Childhood Personnel Center (U.S. Dept. of Ed)</td>
<td><strong>$56M</strong> Collaborative Influenza Vaccine Innovation Center (NIH)</td>
</tr>
<tr>
<td><strong>$8.2M</strong> Coastal Resilience Plan (US HUD/CT Dept. of Housing)</td>
<td><strong>$44.7M</strong> U01 Grant (NIH’s NIA)</td>
</tr>
</tbody>
</table>

Source: EAB interviews and analysis; University of Utah FORGE; University of Kentucky HEAL; University of Georgia CIVIC; IU Bloomington LEADS.
Deploying Competitive Intelligence

Strategic Considerations for Research Leaders

1. How can you utilize these analyses in your daily work? Under what circumstances do you think they will be most valuable?

2. What barriers might you encounter when implementing these types of analyses moving forward? What will it take to overcome these?

3. What are one or two immediate next steps UConn should take based on these analyses?
Better Position Institution with Pre-RFP Interventions

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

Large and Complex Awards Require Proactive Positioning

Pre-RFP Positioning

- Designated strength area in strategic plan
- Won training grant
- Won MRI\(^1\) award
- Upgrade core facilities
- Hosted national conference

Proposal Development

- SOLICITATION RELEASED
- SPONSOR DEADLINE
- Drafted and edited written proposal

2016
- Hired faculty cluster

2017
- Attended agency workshop
- Cluster faculty published paper together

2018
- Core proposal team formed

2019
- Identified partners

1) Major Research Instrumentation Program.

Source: EAB interviews and analysis.
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**
Tactic 2: Federal Agency Relationship Building

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

Source: EAB interviews and analysis.
Four Main Levers for Faculty and Institutions to Cultivate Federal Relationships

**Getting Your Foot in the Door**

### Strategies Mapped by Effort Required and Reputational Impact

1. **Increase Review Panel Engagement**
   - *Primary Contact: Faculty*

2. **Sponsor Faculty Travel to DC**
   - *Primary Contact: Faculty*

3. **Better Leverage Internal and External Staff**
   - *Primary Contact: Research Office*

4. **Recruit Program Officers to Visit Campus**
   - *Primary Contact: Research Office*

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

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**

- Deterred by costs associated with traveling to DC
- Hesitant to travel and speak with program officers independently
- Unsure how to prepare for program officer conversations
- Unclear about next steps to maximize the benefits of travel

**Features of Effective Travel Programs**

- Provide funding (ideally, upfront) for faculty who satisfy clear eligibility and proposal requirements
- Use a cohort model and send research staff to accompany the group and attend meetings as needed
- Have faculty apply to program several months prior to travel and collaborate with research office to develop concept papers, biosketches, and talking points
- 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**

- 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

Source: University of Idaho, [Meet Your Sponsor](https://www.meetyoursponsor.org); 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.
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

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*

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00am</td>
<td>Breakfast with Chief Research Officer</td>
</tr>
<tr>
<td>10:00am</td>
<td>Seminar (followed by Q&amp;A)</td>
</tr>
<tr>
<td>11:30pm</td>
<td>Tour of Campus Facilities and Cores</td>
</tr>
<tr>
<td>12:30pm</td>
<td>Lunch with Provost and President</td>
</tr>
<tr>
<td>1:30pm</td>
<td>One-on-One Faculty Meetings</td>
</tr>
<tr>
<td>3:00pm</td>
<td>Tour of Labs and Centers/Institutes</td>
</tr>
<tr>
<td>4:00pm</td>
<td>One-on-One Faculty Meetings</td>
</tr>
<tr>
<td>5:30pm</td>
<td>Dinner with Deans and ADRs¹</td>
</tr>
</tbody>
</table>

#### Takeaways for Research Office

1. Incorporate some less structured sessions to allow for candid conversations with program officer.
2. Reduce burden on visiting program officers by minimizing number of sessions for which they are presenting.
3. Directly involve senior leaders to signal the institution has prioritized engagement with the agency and acknowledge DOD’s preference for hierarchy.
4. Showcase the institution’s unique capacity and infrastructure.
5. 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.

Source: EAB interviews and analysis.
Tactic 3: Complementary Partnership Development

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

**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:**
- L&C proposal rejected due to gaps in expertise unaddressed through chosen partnership
- Missed a well-aligned opportunity to partner on L&C award

Source: EAB interviews and analysis.
How To Select Your Ideal Partner

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., MSI¹, NCI²)

- **Geography**
  Locations of previously awarded institutions

---

Case in Brief: 2017 NSF ERC³ 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.

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## How to Position Yourself as a Partner

### Three Approaches to Promote Strengths, Capabilities

<table>
<thead>
<tr>
<th>Market Strengths</th>
<th>Demonstrate History</th>
<th>Proactively Outreach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlight unique research strengths and available resources to other universities, agencies, and the broader public through strategic plan and other university marketing materials.</td>
<td>Promote past research partnerships and the depth of cross-institutional engagements through press releases and university media outlets.</td>
<td>Identify and proactively reach out to institutions that complement or advance existing research strengths to develop personal connections.</td>
</tr>
</tbody>
</table>

**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.

**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) Engineering Research Center.

**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.

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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
## Barriers, Perceived and Otherwise

### Reasons Why Faculty Don’t Participate in Collaborative Research

<table>
<thead>
<tr>
<th>Structural Barriers</th>
<th>Non-Structural Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Underappreciated Ursula</strong></td>
<td><strong>Siloed Susan</strong></td>
</tr>
<tr>
<td>“My department doesn’t reward collaborative research during promotion and tenure decisions.”</td>
<td>“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.”</td>
</tr>
<tr>
<td><strong>Busy Burt</strong></td>
<td><strong>Independent Ingrid</strong></td>
</tr>
<tr>
<td>“I am already working on several individual research projects—and that’s on top of my teaching and service obligations.”</td>
<td>“I have no idea how to get a big group of highly independent researchers to work well together as a team.”</td>
</tr>
<tr>
<td><strong>Risk-Averse Ron</strong></td>
<td><strong>Overwhelmed Otto</strong></td>
</tr>
<tr>
<td>“I barely have enough funding for my own small project—no less enough to jumpstart a big collaboration.”</td>
<td>“I don’t want to spend all my time managing logistics—there are just too many people and moving parts for me to coordinate.”</td>
</tr>
</tbody>
</table>

Source: EAB interviews and analysis.
# Early Moves to Eliminate Structural Barriers

## Structural Barriers

<table>
<thead>
<tr>
<th>Structural Barriers</th>
<th>Three Approaches to Address Chronic Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;T(^1) Guidelines Favor Individual Research</td>
<td><strong>Adjust Institutional P&amp;T Guidelines</strong>&lt;br&gt;VPR convened faculty from across colleges to institute P&amp;T guidelines that would elevate team research as an institutional strategic priority</td>
</tr>
<tr>
<td>Teaching Loads Prevent Faculty Engagement</td>
<td><strong>Buy Out Instructional Obligations</strong>&lt;br&gt;Research office provides course release funding for faculty applicants who are pursuing an extramural funding opportunity</td>
</tr>
<tr>
<td>Internal Funding Programs Fail to Support Teams</td>
<td><strong>Sponsor Interdisciplinary (ID) Research Teams</strong>&lt;br&gt;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</td>
</tr>
</tbody>
</table>

1) Promotion and tenure.

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

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.
Tactic 4: Guided Team Formation

Building Teams by Trial and Error

Costly and Poorly Targeted Programs Don’t Yield Desired Outcomes

Common Research Office Programs
- Speed Dating
- Science Cafés
- TED Talks
- Cocktail Hours
- Brown Bag Lunches
- Lecture Series

Desired Outcomes
- Build Faculty Research Teams
- Pursue L&C Opportunities
- Generate Innovative Solutions

Reality Check
- 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.
- Rarely Successful
  Programs tend to produce one-off, small-scale collaborations that are not targeted at specific funding opportunities.
- 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.

Source: EAB interviews and analysis.
## Manufacturing Serendipity

### Four Ways Research Offices Can Guide Team Formation

<table>
<thead>
<tr>
<th>Approach</th>
<th>Focus</th>
<th>Audience</th>
<th>Cost¹</th>
<th>Time¹</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Networking Sessions</strong></td>
<td>Targeted programs for faculty to make connections with others interested in specific topics</td>
<td>Small group of internal faculty</td>
<td>Low (e.g., venue, marketing)</td>
<td>Low (e.g., invitations, outreach)</td>
<td>Short-term, small-scale faculty teams</td>
</tr>
<tr>
<td><strong>2. Seminars</strong></td>
<td>Structured programs to teach faculty about emergent topics and agency opportunities</td>
<td>Medium group of internal faculty</td>
<td>Medium-low (e.g., room reservations, speakers)</td>
<td>Medium-Low (e.g., content development, speaker recruitment, advertising)</td>
<td>Short-term, medium-scale faculty teams</td>
</tr>
<tr>
<td><strong>3. Symposia</strong></td>
<td>Large-scale programs to convene experts on a specific topic</td>
<td>Large group of internal and external faculty, experts, and partners</td>
<td>Medium (e.g., speakers, travel)</td>
<td>Medium (e.g., speaker recruitment, logistic coordination)</td>
<td>Long-term, large-scale faculty teams</td>
</tr>
<tr>
<td><strong>4. Pop-Up Institutes</strong></td>
<td>Short-term initiatives to catalyze interdisciplinary team formation around topic area</td>
<td>Medium to large group of internal faculty and external partners (as needed)</td>
<td>High (e.g., core facility use, space, seed funding)</td>
<td>High (e.g., coordinating proposal reviews, reporting)</td>
<td>Long-term, large-scale faculty teams</td>
</tr>
</tbody>
</table>

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

Source: EAB interviews and analysis.
# Network with Intention and Focus

## Iowa Hosts Speed Networking for New Core Research Facility

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

## Iowa’s Networking Results

**75%** Survey respondents reported a new potential research collaboration

Source: University of Iowa, [UIMF Funding Opportunities](#) and [UIMF Speed Networking](#); EAB interviews and analysis.
Northwestern Organizes Seminar to Catalyze Collaboration in Quantum Engineering

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

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

Source: Northwestern University, Evanston, IL; EAB interviews and analysis.
Iowa Hosts Three-Day Symposium to Solve the Opioid Crisis

**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

Source: Knowinnovation, Ideas Labs; University of Iowa, Opioid Ideas Lab; EAB interviews and analysis.
Team Formation Approach: Pop-Up Institutes

Temporary Locations, Permanent Collaborations

UT Austin Establishes Pop-Up Institutes to Rally Faculty

2020 Pop-Up Institutes Timeline

<table>
<thead>
<tr>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td></td>
</tr>
<tr>
<td>Pop-up RFP announced</td>
<td>Meet &amp; Greet</td>
</tr>
<tr>
<td>April</td>
<td></td>
</tr>
<tr>
<td>Pop-ups selected</td>
<td>Pop-ups launch for one month during summer</td>
</tr>
</tbody>
</table>
| October | Final reports due to VPR

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.

Source: University of Texas at Austin, Pop-Up Institutes; EAB interviews and analysis.
Tactic 5: Targeted Leadership Identification and Training

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

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

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

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

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

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

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

Source: Purdue University, FLAIR Program; EAB interviews and analysis.
Faculty Tend to Prioritize Science over Administrative Requirements

Common Failure Points in Coordinating Team Proposals

- Team chosen through LS\(^1\) process
- Researchers work on science independently
- Cancelled meeting because no one booked a room
- Missed sponsor deadline
- No kickoff meeting
- No clear responsibilities are assigned
- Forgot to get cost-share agreements and develop budget
- Conflict over project scope and direction

Institution fails to submit any proposals for LS opportunity

Research Project Management Resources

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

Source: EAB interviews and analysis.
## Build a Repository of Self-Service Tools

Memorial Translates Project Management Principles to Research Context

### RPM\(^1\) Tools

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

![Project Scope Template](https://example.com/project-scope-template.png)

Source: Memorial University of Newfoundland, [Research Project Management Templates](https://example.com/project-management-template); EAB interviews and analysis.

---

1) Research project management.

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Calling In the Rapid-Response Team

Research Staff Deployed for Short Term Proposal Development

University of Central Florida’s “REACT” Approach

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

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

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

Coordinate
Monitor project progress and liaise with collaborators

Track
Manage revisions and finalization—then document lessons learned

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

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.

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Source: University of Central Florida, REACT Program; EAB interviews and analysis.
Advantages of Dedicated PM Staff

**Specialized Expertise**
All PMs 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.

---

**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

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
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

Source: EAB interviews and analysis.
Tactic 7: Proactive Proposal Interventions

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.

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

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.
2. Build Repository of L&C Templates and Examples

Share Previously Submitted L&C Proposals to Kickstart Writing Process

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.

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

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

**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

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

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

Key
★★★★: High Expertise
★★★: Moderate Expertise
★★: Low Expertise
★★★: High Cost
★★: Moderate Cost
★: 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.
5. Revamp Limited Submission Policy and Process

Internal Process Poses Challenges, But Also Opportunities

**Common Stakeholder Frustrations**

- **Faculty**
  
  “I don’t understand why the research office is making me jump through a bunch of extra hurdles for no reason.”

- **Staff**
  
  “Coordinating the process takes a ton of time. Faculty rarely meet the deadlines and never want to serve as reviewers.”

- **CRO**
  
  “There is an immense amount of pressure on me to pick the right team—and I don’t feel equipped to do so.”

**Overlooked Benefits of LS¹ Process**

- Provides faculty with constructive peer feedback they can use to enhance their competitiveness for the LS opportunity or future awards.

- Helps staff gain insight into faculty interests and prioritize how to deploy resources and services.

- Allows CROs and research office to directly execute on strategy by making informed go/no-go decisions.

---

1) Limited submission.

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Tactic 8: Proposal Reapproach Support

Rejection Can Be Another Step Toward Success

Likelihood of Success for L&C Proposals

Most L&C proposals are awarded on resubmission.

Vast majority of L&C proposals are rejected on their first submission.

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

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

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

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

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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