

The Modern R1 University

Unpacking the Carnegie Classifications and Pathways to
Research Growth in 2025

EAB's New Federal Policy Navigation Suite



Four Resources to Support the Right Conversations at the Right Time

Policy Proposal Primers

- Quickly educate stakeholders on proposals and implications
- Define key questions to guide cabinet and board discussions

Implementation Probability Index

- Monitor which changes are likely to occur within the next six months
- Help to alleviate anxiety around implausible actions



Peer Position Pulse Checks

- Monitor positions and intentions of peer institutions
- Inform strategic decisions about where to align or differentiate

Scenario Planning Exercises

- Prepare strategic options for disruptive scenarios
- Identify easily overlooked strategic opportunities

Unpacking “Research” Carnegie Classifications



The Four Factors that Contribute to Classifications



R&D Expenditures in S&E Fields

- Computer and information science
- Geo/atmospheric/ocean science
- Life sciences, biomed, and health
- Ag and natural resources
- Physical sciences and chemistry
- Psychology

R&D Expenditures in Non S&E Fields



- Business
- Communications
- Education
- Humanities
- Law
- Social Work
- Visual and Performing Arts



S&E Research Staff

- Non-faculty research staff with doctorates
- Post-doctoral appointees
- Limited to those working in the discipline areas listed above

Doctorates Conferred



- STEM fields
- Humanities and social sciences
- All other fields including business, education, social work, public policy, etc.

Basic Carnegie Classifications—R1

The Four-Year College and University Classifications



Doctoral Universities

- **R1: Very High Research Activity (187)**
- R2: High Research Activity (139)
- Research Colleges and Universities (216)

General Criteria

- Institution awarded at least 20 research/scholarship doctoral degree
- OR at least 30 professional practice doctoral degrees in at least two programs
- For R2, must have at least \$5M in research expenditures
- For R1 must have at least \$50M in research expenditures and 70 research doctorates awarded



The Median R1

Expenditures Breakdown

- Total: \$287M
- Fed: \$130M (45%)
- State: \$29M (10%)
- Institution: \$101M (35%)
- Business: \$21M (7%)
- Non-Profit: \$5M (2%)

S&E Breakdown

- S&E: \$221M
- Non-S&E: \$66M

Student Breakdown

- Total: 28,747 (5872 grad)
- Doctorate Degrees: 285

HBCU Research Expenditures, FY2023



Research Expenditures in Thousands

Universities	HERD Rank	Total	Federal	State and Local	Institution	Business	Nonprofit
Howard U.	1	84,756	47,662	2,840	22,461	4,552	5,140
Florida A&M U.	2	65,159	54,363	2,851	6,503	586	856
North Carolina A&T	3	62,307	37,152	2,075	21,880	628	292
Morehouse School of Medicine	4	57,125	41,069	987	10,710	0	4,359
Morgan State	5	43,868	30,451	5,582	5,635	721	644
Delaware State	6	33,499	24,167	4,093	3,975	48	1,181
Tennessee State	7	28,246	15,983	1,177	10,740	155	187
Tuskegee	8	25,625	16,023	3,565	2,539	0	0
Meharry Medical	9	22,002	18,398	0	603	64	2,937
Prairie View A&M	10	21,791	12,354	4,391	3,550	490	1,006

Why It's Hard to Compare R1s

The R1 Category: Already Big, Getting Bigger and More Diverse



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The "Min" R1s



- Expenditures: \$53M
- Students: 13,387
- Doctorate Degrees: 435



- Expenditures: \$52M
- Students: 17,397
- Doctorate Degrees: 541

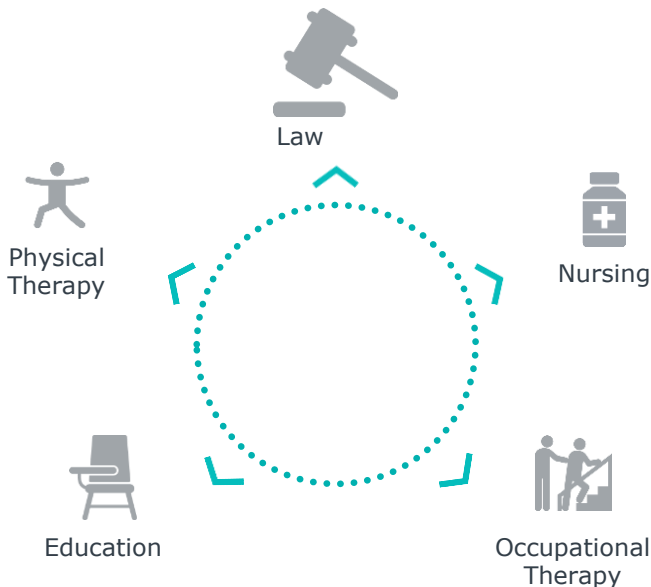


- Expenditures: \$50M
- Students: 20,877
- Doctorate Degrees: 1,719

Double-Clicking on Doctoral Degrees

Carnegie Standard Changes Bring More R1s to the Group

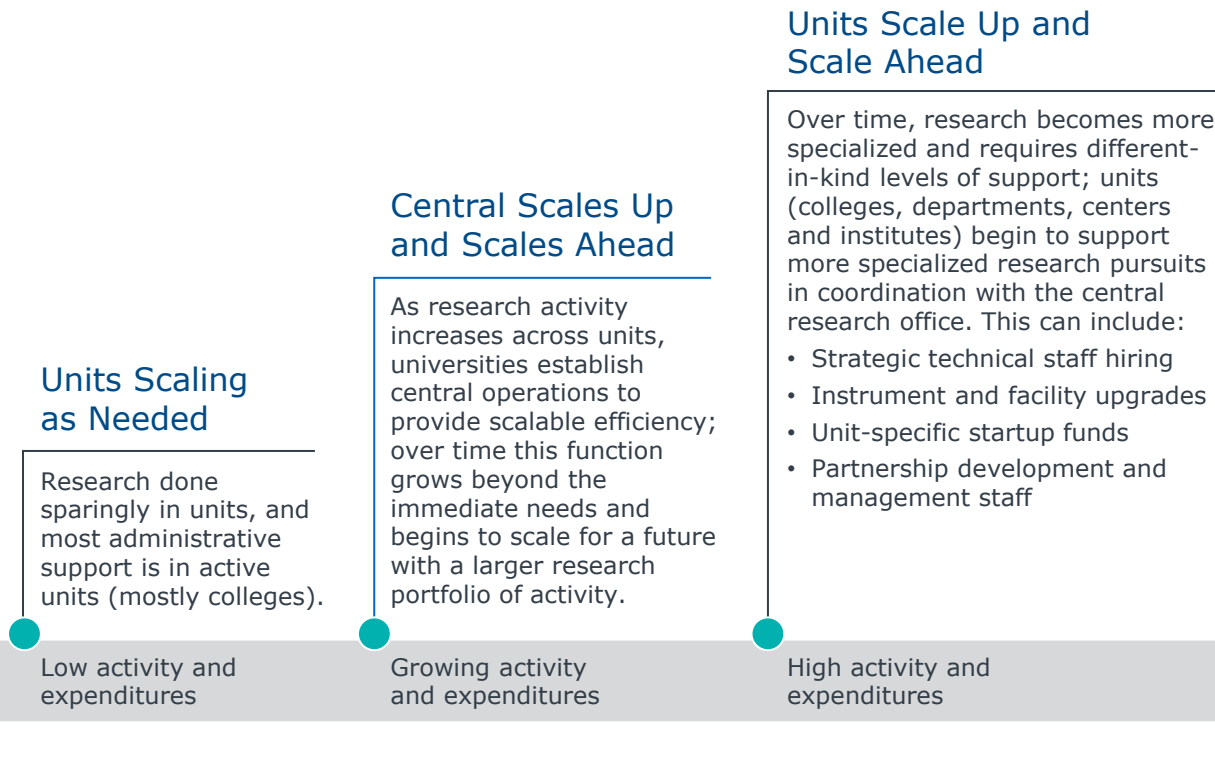
Five Most Common Professional PhDs among Newly Elevated R1s





Where is the Central vs Decentral Pendulum?

A Simple Maturity Curve for the Research Administration Ecosystem



Critical Considerations

- What will becoming a Carnegie classified “research university” help us achieve?
- How will our faculty perceive the shift?
- What resources do we have to make the necessary investments to achieve and sustain research growth?

Core Mission of the University Research Office



What It Is and How It Changes as You Progress Toward R1

"This office is about **customer service.**"



"This office is about **collaborative service.**"

"**Call us** if you need anything."



"**We will call you** when you need something (and you can always call us)."

"**These** are the things we work on."



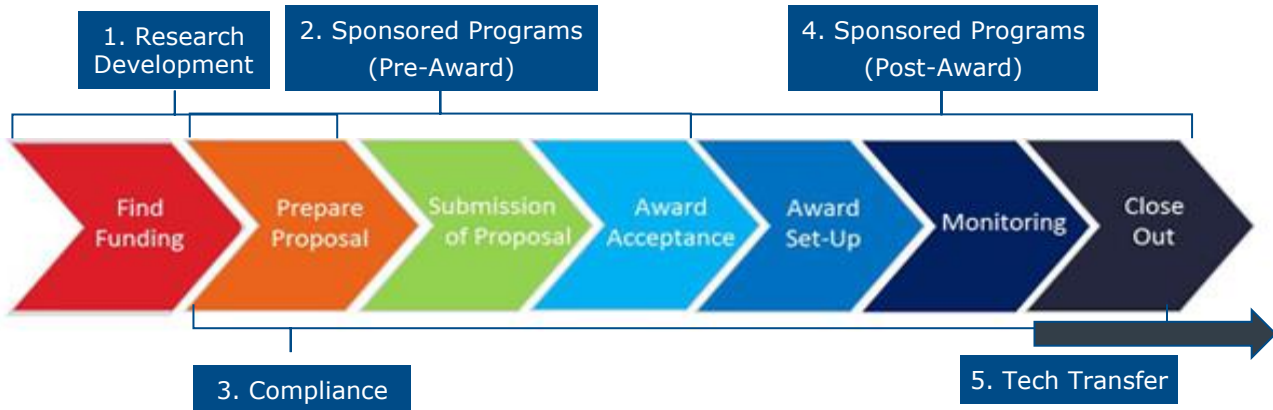
"**We will work on anything** you bring to us and find a way to make it work."

"**Compliance is paramount.**"



"**Compliance is still paramount.**"

Suring Up the Research Pipeline for Growth



1. Research Development



Primary Functions

- Curate funding opportunities across disciplines
- Support the pursuit of large and complex opportunities
- Conduct competitive analyses of opportunities

How is this different at an R1

Research Development becomes the proactive arm of the enterprise—using competitive intelligence and government relations to identify opportunities early and bring together teams quickly to pursue grants.



Level of Distribution

- Mostly centralized
- Units may offer “grant writing/development support” unique to their disciplines, but most L&C support remains centralized

How is this different at an R1

Central RD offices include unit-based research administrators as part of their intelligence network to discern which faculty may be good additions to research teams or help identify potential team leaders.



Staffing Rates and Specializations

- 1 dedicated staff member
- Combination of Research Development and Funding Information or Strategic Initiatives
- Wears a lot of hats at small R1s

How is this different at an R1

Most R1s have at least 3 staff in RD offices, and divide their roles more intentionally across funding, team and project management, and activities and engagement; some also add data analysts, funding curators, and even government relations professionals.

Positioning for R&D Opportunities

Not as Simple as “Apply and Hope”

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 Mission-Driven Opportunities

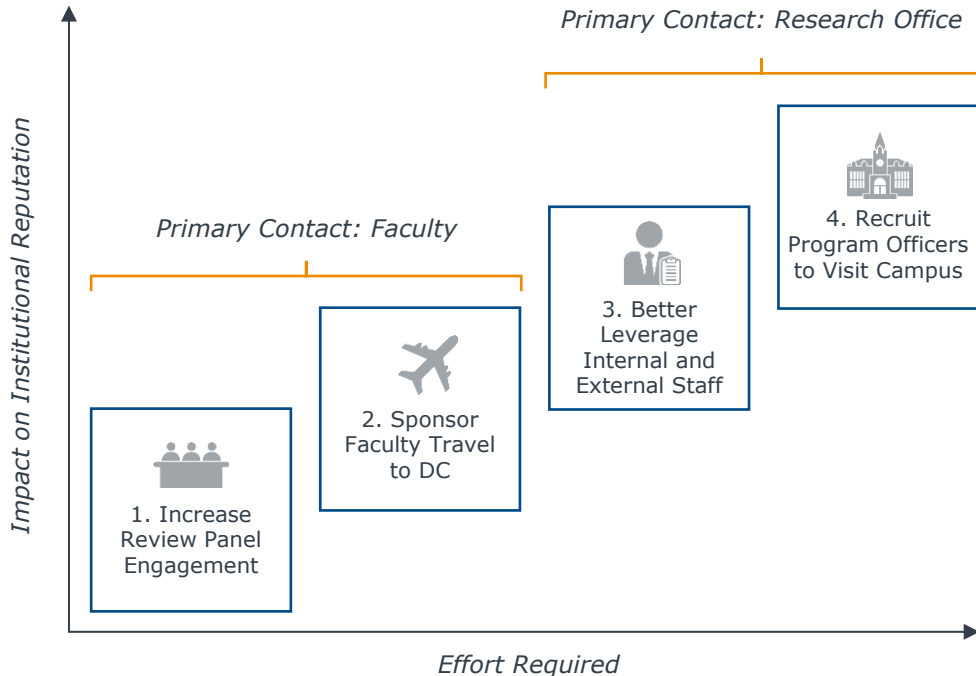
Corresponding Case Studies:



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



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.

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.

2. Pre-Award



Primary Functions

- Grant setup and alignment with funding opportunity
- Budget and administrative development
- Final reviews and submission support

How is this different at an R1

Functions remain largely the same but the volume, diversity, and complexity increase—there are more grants, from more sources, with greater degrees of complexity than at R2s.



Level of Distribution

- Mix of centralized and decentralized
- Unit support varies by unit; bigger research units may have dedicated support while smaller ones rely on central support

How is this different at an R1

High-expenditure units likely have their own research administrators who support part of the pre-award process—the goal for the central unit then is complement, not duplicate, the unit efforts.



Staffing Rates and Specializations

- 6-8 staff
- Titles include “Grants and Contracts Officers/Specialist” and “Sponsored Programs Administrators”
- Only listed specialization is “Proposal Budget Specialist”

How is this different at an R1

As some units take on some the pre-award work, the role of some central officers shifts to providing secondary (or double-click) checks on proposals, often closer to the deadline than those they review first; the size of the grows too but by how much depends on the level of distribution.

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 South Florida	UCSF 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


Build a Repository of Self-Service Tools

Memorial Translates Project Management Principles to Research Context

RPM ¹ Tools	Purpose
Intro to RPM¹ 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



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.

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

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



Targeted Skills Needed For Leaders Of Large and Interdisciplinary Research Teams

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

3. Compliance



Primary Functions

- Maintains high-level compliance training programs, policies, and procedures
- Reviews grants for specific compliance challenges
- Generates reports as needed

How is this different at an R1

Less about different processes and more about volume of work; need to keep an eye on efficiency of processes as volume and complexity burdens grow with expenditures and faculty size



Level of Distribution

- Mostly centralized
- Some units may offer trainings and reviews specific to in-unit equipment or facilities, but still use central reporting and management structures

How is this different at an R1

With more funded research from more sources, the central-decentral relationship has to be seamless to ensure compliance across all units and funders, requiring a much stronger structure of checks and balances.



Staffing Rates and Specializations

- 3-5 staff
- Roles range from general "Monitors" to "IRB/IACUC" coordinators, "Technology Analysts," and "Business Coordinators"
- Most specialized division

How is this different at an R1

This grows quite a bit as expenditures grow, specifically in areas related to the biggest research areas (e.g., adding an IRB for health sciences) or in response to increasing state and federal oversight (e.g., export control).

Sometimes Burden Lies Beneath the Rules

Audit Policies and Processes to Weed Out Undue Compliance Burden

Policy Audit

Step 1

Ensure Baseline Compliance

- Do your policies match most current standards?
- Do compliance stakeholders approve of updated language?
- Are all digital and physical policies up-to-date?

Audit Requirements



Most Up-to-Date Standards

Collect all current regulation language related to research compliance

Source: COGR, AAAS



Stakeholder Input

Solicit feedback from PIs and research admin staff about most painful processes

Source: FDP, internal surveys



Risk-Appetite Definition

Consult university executive leadership to determine palatable level of research risk

Source: Compliance accrediting groups, peer networks

Procedure Audit

Step 2

Simplify Enforcement to Baseline Standard

- Are only the minimum legal standards applied?
- Do PIs and research administrators understand when to apply higher standards?
- Have duplicative processes been eliminated?

What to Keep, Adjust, and Review

A Post-Audit Framework for Balancing Compliance With Burden

Three Categories of Compliance Policies



Fully Compliant, Minimally Burdensome

Requires: No Changes

However, compliance staff should monitor rule changes to ensure approach remains balanced.

Example: Conflict of Interest (COI)

At *University A*, the Compliance Audit revealed that COI policies were in line with legal requirements without placing undue burden on PIs or staff.



Overly Compliant, Somewhat Burdensome

Requires: Procedure Changes

Likely require adherence to the most advanced standards; compliance staff should review the minimum required legal standards and realign processes to the bare minimum obligations.

Example: IACUC

At *University B*, many departments were still applying USDA standards to non-USDA protected species, which created extensive approval and review processes that were not legally required.



Lacking Final Rules, Seeking Direction

Requires: Policy and Procedure Changes

There are several active compliance topics without final resolutions. In these instances, institutions can model how different iterations could change administrative workloads and processes.

Example: Common Rule

Without a final rule to enact, *University C* has identified areas where they are likely to retain old IRB practices no longer required under the new rule (e.g., certifications, certain exemption sign-offs).

Seek and Destroy Unnecessary Effort

Course-Correcting in Recognized Areas of Overburden

Common Areas of Overburden and Reduction Efforts

IACUC

- Lower default level of review
- Establish ranges of post-op review times
- Reduce non-health and safety required details
- Adopt procedure libraries for common practices



IRB

- Arrange reviews by risk level
- Tailor training requirements to only those necessary for proposed research at hand
- Consider extended approval periods for non-federal research



Lab Safety

- Develop lab-specific policies and procedures
- Employ functional training requirements
- Prioritize on-the-job training opportunities



Conflict of Interest

- Institute automated financial conflict reviews in reporting system
- Create levels of review and prioritize based on severity of risk



Immediate Answers to Complicated Questions

Yes/No Tool Eliminates Need for IT Review of Each Proposal

Sample Responses to Diagnostic Questions

Complex/
restricted
projects
escalated for
IT review

2. Is your data controlled by the following regulations: PCI-DSS (Payment Card Industry – Data Security Standard), FISMA (The Federal Information Security Management Act), ITAR (International Traffic in Arms Regulations), EAR (Export Administration Regulations), or other Export Control regulations?

Yes

No

Data Classification: RESTRICTED

Your data may be classified as Restricted, depending on the contractual obligations. Specific examples of Restricted Data include: PCI-DSS (Payment Card Industry – Data Security Standard) complaint information, Export Controlled data such as ITAR (International Traffic in Arms Regulations) or EAR (Export Administration Regulations), and FISMA (The Federal Information Security Management Act) controlled data.

Most information in this category will require handling standards that are unique to the law, regulation, or contract that is applicable.

Consult with OIS for guidance on how to handle this information. If you have any questions please contact the Office of Information Security (OIS) at security@psu.edu.

Simple
projects
referred to
policy

9. Does your data contain publicly available information, directory information, information made freely available by any public resource, or other already published data?

Yes

No

Data Classification: LOW

Instructions for handling data in this risk classification can be found in the Office of Information Security (OIS) maintained security standards as governed by Penn State Policy AD-95. If you have any questions please contact the Office of Information Security (OIS) at security@psu.edu.

4. Post-Award



Primary Functions

- Set up awards
- Review and/or generate interim reports as needed
- Close out awards and ensure financial and non-financial milestones are met

How is this different at an R1

Like pre-award, the biggest change here is volume and complexity; in particular, R1s do more research that falls under heavier scrutiny from federal agencies, and the reporting burden increases as expenditures grow.



Level of Distribution

- Mix of centralized and decentralized
- Centralized support often shared between Research and Finance/Budget office; unit support mostly on financial post-award side.

How is this different at an R1

Larger research universities tend to divide out financial grant accounting between central offices, units, and shared service centers, increasing the administrative complexity (but hopefully improving efficiency).



Staffing Rates and Specializations

- 6-8 staff
- Titles vary from “Grants and Contracts Officers/Specialist” and “Grants Accountants”
- More specialization here on the financial post-award side

How is this different at an R1

While post-award offices grow as expenditures increase, the diffusion of responsibility makes it hard to account for how much growth occurs in the research office vs units, shared services offices, and central finance/budget offices.

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

Zeroing in on the Right Level of Detail

Designating Ownership for Each Step

CU Boulder Roles and Responsibility Matrix

Research Administration: Roles and Responsibilities Matrix

Adopted April 2015

ROLE DESIGNATIONS LEGEND

Primary Responsibility for action/implementation of tasks:

P = PRIMARY currently

PF = PRIMARY in FUTURE

Support/Consult, as necessary

S = SUPPORT currently

SF = SUPPORT in FUTURE

RESEARCH ADMINISTRATION PROCESS	Principal Investigator (PI)	Office of Contracts and Grants (OCG)	Sponsored Programs Accounting (SPA)	Department Administrator	Technology Transfer Office (TTO)	Office of Industry Collaboration (OIC) (non-federal research only)	Research Compliance Office Export Control Reg. ACUC	Property Accounting Office (PAO)
Pre Award								
Preparing to Submit a Proposal								
Locate funding opportunity	P	S				S		
Read and interpret proposal guidelines	P	S				S	S	
Prepare Non-Disclosure Agreements, as needed	S				P	S		
Prepare Teaming Agreements, as needed	S	P				S		
File Annual DEPA	P						S	
Proposal Development								
Obtain and understand sponsor instructions for proposal preparation	P	S		S				
Identify Cost Sharing in proposal and obtain cost share approval from Department	P	S						
Identify and indicate approvals needed for proposal	S	P						
Completion of Proposal PI Checklist/Intake Form	P			S				
Provide guidance to PI on proposal preparation		P		S	S	S		
Develop and revise technical narrative, Bio sketches, Current and Pending	P			S				
Develop administrative pages of proposal		P		S				
Ensure required Effort available, if awarded	P		S					
Identify subcontractors/collaborators	P							
Request and collect necessary Subcontractor Budget, Statement of Work (SOW), Commitment Form and Sole Source Justification	P	S		S				
Notify Office of Industry Collaboration of proposal with Industry (non federal/non federal flowthrough)	S	P						
Draft Budget [Proposal Development module in Boulder eRA will empower PIs to create budgets]	S/ PF with eRA	P		S				

5. Tech Transfer, Commercialization, and Innovation

30



Primary Functions

- Serve as a triage point for inbound industry interest
- Connect various stakeholders for engagement opportunities
- Commercialize research and decide on best course of tech and knowledge transfer

How is this different at an R1

Like other functions, volume and complexity increase as expenditures grow; more so, the pressure from stakeholders to “hit homeruns” in commercialization increases (too often without additional support).



Level of Distribution

- Mostly centralized
- Units may operate innovation and business engagement functions, but contractual commercializing remains centralized

How is this different at an R1

As units grow more comfortable with community and industry engagement, they can develop their own procedures and vehicles for further developing partnerships—this is okay so long as they remain compliant.



Staffing Rates and Specializations

- 1-3 staff
- Titles range by specialty from “Tech Transfer Manager” to “Counsel” or “Contracting Specialist”

How is this different at an R1

Tech transfer offices have the largest range of all functions across larger R1s, and the variety depends on other industry engagement functions across the institution (and less to do with a direct calculation between expenditures and expected commercialization activity).

Boot Camp Mirrors Real Experience

R·I·T

Sessions Prepare Faculty to Work with Program Officers



Learning From an Expert

Session features a speaker with significant experience and expertise with mission-driven agencies



Getting Multiple Perspectives

Panel discussion features multiple successful researchers who share their experience and lessons learned



Developing a Pitch

Participants work with peers and experts to hone their pitch to mission agencies



Vying for Financial Support

Participants present their pitches to a “Shark Tank” style panel, competing for financial support

Pitching to the “Sharks”

- Participants learn to communicate their ideas and answer questions in the moment
- Session prepares participants for conversations with program officers



Securing Travel Funding

Participants with successful pitches receive funding to travel to meet with program officers

Mobile Workshops Deploy Across Campus

Making Content Easily Accessible to All

KANSAS STATE
UNIVERSITY

Working with Industry Workshops

- Working with Industry team developed “menu” of workshops that can be brought directly to any unit on campus
- Converted content from original Working with Industry Boot Camp
- Sessions can be 45 minutes to 2 hours and can be tailored to the audience
- Workshops are conducted in the location chosen by the requested unit

Workshops Customized to Meet Audience Needs

- ✓ Intensive nature of sessions allows for more in-depth coverage of topics
- ✓ More interactive and can include case studies relevant to the audience
- ✓ Opportunity to reach faculty who might not have self-selected to attend the boot camp

Program Leads to Increase in Industry Partnerships

20%

Increase in number of industry partnerships from 2016 to 2017

80%

Increase in number of industry partnerships over last five years

42

Number of master research agreements in 2017 (up from 7 in 2015)

How to Define Your Innovation Mandate

Three Checks on Current and Future Innovation Investments



What are the goals and metrics that define success?

Establish goals and metrics by cultivating pan-university consensus on rationale for investing in innovation resources and desired outcomes



What resources do we need to remove innovation roadblocks?

Identify gaps and build targeted resources by determining barriers that hinder commercialization and create infrastructure aimed at lowering them



What boundaries guide innovation investments?

Avoid mission creep by pushing back on providing additional services that do not align with local needs and institutional goals

Identified Gap



"Faculty at our institution just aren't interested in commercializing their research."



"A lot of ideas our faculty come up with seem strong, but nothing ever pans out beyond the idea."



"We have a ton of patents in our portfolio but, no one seems interested in buying them."

Sample Activities



Launch entrepreneurial networking events and case competitions to generate interest



Invest in proof-of-concept resources to help vet commercial viability and develop ideas further



Provide incubation and acceleration resources to further mature inventions into viable products



Developing a Needs-Based Innovation Ecosystem



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UAA Builds Innovation Ecosystem Targeted at Supplying Venture Capital



UAA Lacks Local Venture Capital Infrastructure...



Identify Innovation Gaps and Goals

- UAA identified need to incubate startups given the lack of venture capital and startup support in Alaska
- Recognized Anchorage lacked preexisting innovation ecosystem and access to venture capital, limiting their IP value
- Wanted to increase rate of faculty's commercialization activity and their success in forming startups

...Builds Their Own by Partnering With Private Investors to Support Their Startups



Create Standalone IP Management Entity

- UAA transfers IP portfolio to Seawolf Holdings, a wholly university-owned management LLC
- Seawolf Holdings licenses UAA's IP to startups and receives an equity stake in company in exchange
- UAA deprioritized licensing monetization by exchanging their IP for equity with the goal of lowering costs for their startups



Engage Private Investors for Venture Capital

- Seawolf Holdings forms public-private partnership to bring in capital and expertise from local entrepreneurs
- Private investors capitalize and manage dedicated venture capital fund for UAA's startups through general and limited agreements
- Through venture capital fund, private investors sit on the boards of UAA's startups and provide strategic consultation

Use Industry to Pursue Federal Opportunities

ECU and UMass Lowell Create Dedicated Programs to Pursue Joint Funding



Office of National Security and Industry Initiatives



Pursues funding opportunities from government and industry in the national security space



Hires staff with experience in the Department of Defense and national security aligned industries



Positions ECU at the forefront of major defense initiatives and national security priorities

Example Partners:

- Department of Defense
- Department of Veterans Affairs



Printed Electronics Research Collaborative



Establishes partnerships between government, industry, and other universities around printed electronics



Operates through a tiered membership model to engage industry partners to pursue federal funding



Receives 3:1 funding match from the Commonwealth of Massachusetts to launch the collaborative in 2015

Example Partners:

- 20 companies, including Raytheon
- Office of Naval Research



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