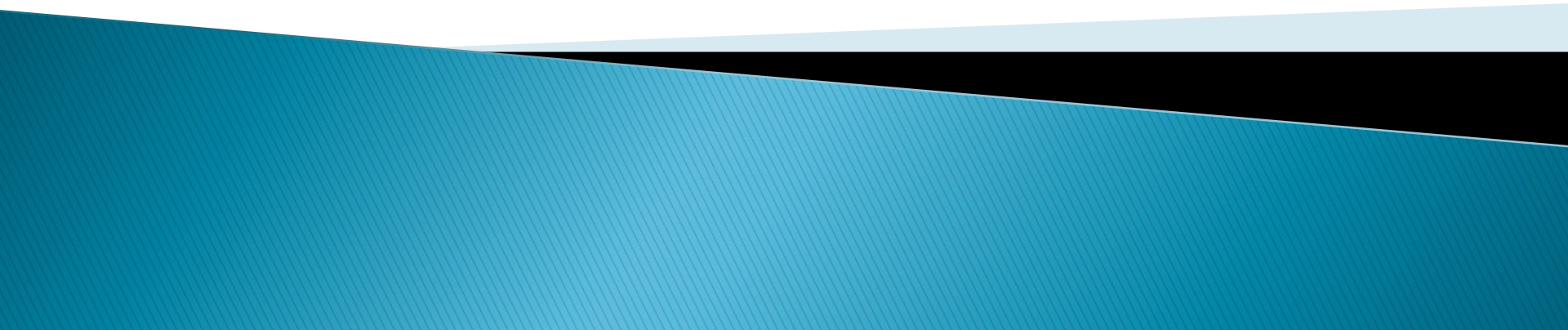


Research Development Management and Infrastructure

Marjorie Piechowski, Ph.D.
Emerita Director of Research Support
University of Wisconsin–Milwaukee
College of Engineering & Applied Science



Learning Objectives

- ▶ Identify at least three best practices in building an institutional research development infrastructure
- ▶ Describe organizational models, staffing patterns and emerging trends in research development
- ▶ Describe strategies for integrating research development with existing infrastructure in research administration and coordinating research development across the institution
- ▶ Create networking opportunities for research development professionals
- ▶ Apply knowledge/best practices to build and strengthen research development in own institution

Starting Point: Research Development State of the Art

Research Development as defined by National Organization of Research Development Professionals (NORDP)

“encompasses a set of strategic, proactive, catalytic, and capacity-building activities designed to facilitate individual faculty members, teams of researchers, and central research administrations in attracting extramural research funding, creating relationships, and developing and implementing strategies that increase institutional competitiveness.” <http://www.nordp.org>

- RD professionals perform, among many other roles:
 - Strategic advancement of research mission
 - Identification and dissemination of funding opportunities
 - Proposal development
 - Team building/team science

Research Development (RD) Overview

- ▶ Research development an emerging field from research administration, in all types of institutions
- ▶ RD a SRAI new certificate in 2018, replacing former grantsmanship certificate
- ▶ RD = integrated approach to research growth
- ▶ Increasing number of RD conference presentations and available jobs
- ▶ Sometimes called pre-pre award
- ▶ Needs long-term commitment from institution, using incremental and long-term metrics to demonstrate success
 - Results will not be immediate but can be profound

Why do Research Development?



Why RD Now?

- ▶ Complex Research Problems = Complex Approaches and Support
 - New challenges for institutions (and research administrators and investigators) to increase or even to maintain grant activity
 - New funding emphasis on collaboration and large-scale multidisciplinary/interdisciplinary projects
 - Therefore, a need for new institutional strategies
- ▶ Research development provides the resources and infrastructure to develop complex proposals that address complex problems
- ▶ RD helps to build individual and institutional research capacity

Ohio State RD Statement of Purpose

- ▶ The Proposal Development Office (PDO) supports Ohio State's research community in the early-stage identification, analysis, planning and development of strategic, multidisciplinary funding opportunities.
- ▶ The PDO team works directly with faculty and key university administrators to promote a culture change designed to identify, develop, and implement strategies that increase institutional research capacity and competitiveness.
- ▶ To accomplish this goal the PDO team manages activities such as: faculty development; proposal planning consultations; profiling federal, industrial and foundation sponsors; tracking opportunity development; analyzing funding opportunity requirements; determining our research capabilities; capture planning; managing pink/red team reviews; building new interdisciplinary teams; positioning/facilitating win strategy development; networking; and proposal management/planning.

To Build, or Not To Build an RD Function

- ▶ Before deciding whether to build an RD infrastructure, the institution needs to think:
 - *Strategically:* Is there a plan? Is research part of it? Who is the champion of RD? What constituents have been involved? What are the research goals, short-term and long-term? Rankings? Metrics?
 - *Financially:* What is the baseline? From what sources? What are the trends?
 - *Institutionally:* What are current research strengths? Researcher demographics? Existing infrastructure? Existing staffing? Existing facilities?

If You Build It

- ▶ To establish an effective RD function institutions need to examine (and change, if need be) their research processes, policies, and procedures
- ▶ RD requires a significant plan and investment
- ▶ RD works best when it's responsive to the needs of:
 - The institution (strategic plan, administration)
 - The researchers/scholars who will use the services
 - OSP and other affected offices/functions (IRB, IACUC, Technology Transfer, Corporate and Foundation Relations, etc.)
 - The RD staff themselves who will deliver the services

RD: A Philosophy and a Process

- ▶ RD looks, feels, and operates differently from traditional research administration
- ▶ RD provides strategic, proactive, catalytic, and capacity-building activities
 - Adding RD will represent a big culture change (and one that WILL NOT happen overnight)
 - There may (probably will) be people, at every level, who will be suspicious/skeptical of, and resistant to, the change
 - Don't try to go it alone– proactively network with other RD staff across your organization and through SRAI, NCURA, NORDP, CARA, EARMA, etc.

Major RD Services and Roles

- Strategic planning and advancement of research mission
- Identifying and maintaining external collaborations (academia, industry, local, state, federal, international organizations and governments)
- Identifying institutional and individual research strengths
- Identifying and disseminating funding opportunities
- Presenting workshops and training in proposal development
- Building and fostering individual and institutional research capacity
- Team building/facilitating team science
- Managing/writing/editing large-scale, complex proposals and projects
- Serving as project manager or evaluator for large-scale projects
- Editing proposals and other academic publications
- Managing limited submissions/internal grant programs
- Disseminating research results/success
- Collecting, maintaining, analyzing proposal and research metrics

Major RD Services and Roles

- ▶ Some RD services and roles may already exist in an institution, in varying locations:
 - Without institution-wide approach
 - Unknown to each other
 - Providing wide and diverse array of services
 - As part of other professional responsibilities or
 - As sole responsibility
 - Without a standard position description, title or salary range
 - With varying expectations of knowledge, ability and skills

Discussion: Your Baseline

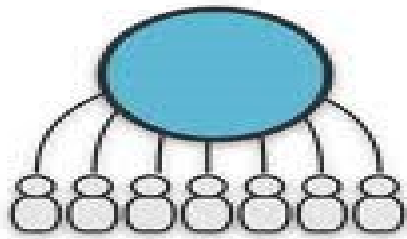
- ▶ Of the many RD services, which ones would you approach first? Why?
- ▶ What RD strategies does your institution already offer? Where are they conducted?
- ▶ What metrics/evaluations/evidence of success does (or should) your institution use?
- ▶ Is there a cost–benefit analysis of such strategies?
- ▶ Is there a process for deciding which to use and who gets to use them?

Where RD Fits Institutionally

- ▶ Research development isn't necessarily a separate function/office—but it can be.
- ▶ RD may be combined with or called faculty development
- ▶ RD resides in many locations, depending on range, depth, breadth, intensity of services:
 - President's Office
 - Provost/Chief Academic Office
 - Economic Development–Strategic Initiatives–Entrepreneurship
 - VP for Research Office
 - Sponsored Projects Office
 - Colleges/departments
 - Research centers/institutes

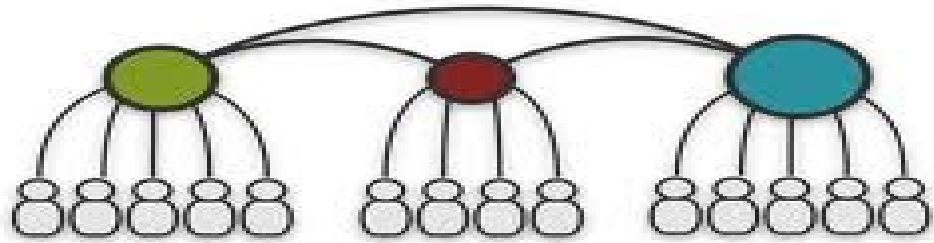
Central vs. Distributed Models

Centralized



- One RD office or RD function based in central office
- Works better for smaller institutions and programs
- In larger institutions may only support strategic proposals

Distributed



- RD offices/functions decentralized in units/departments
- Works better for larger institutions
- Helps if RD staff have subject-matter expertise

Examples of Each

▶ Central

- University of Wisconsin–Milwaukee
- University of Delaware

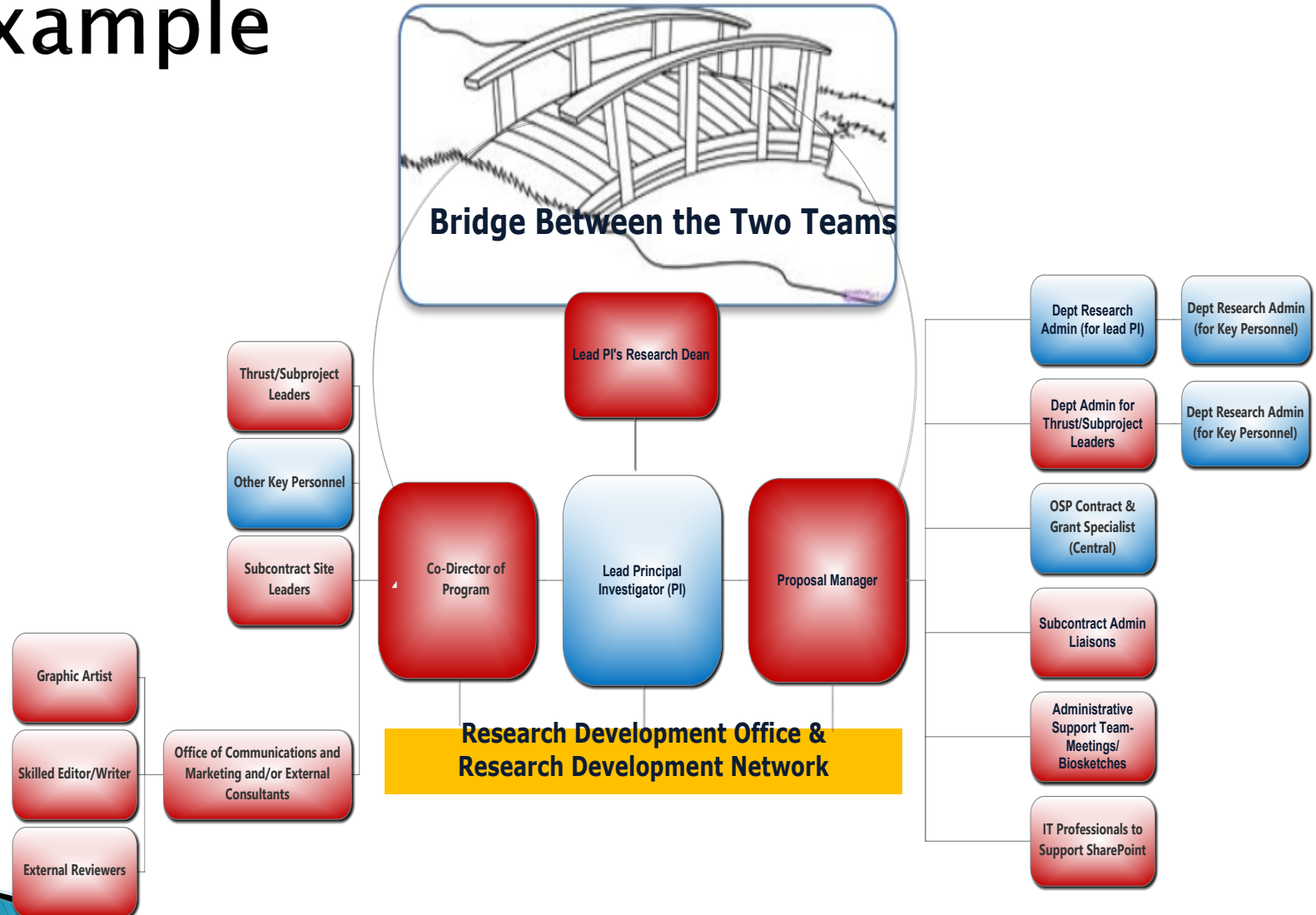
▶ Distributed

- Osaka University, Japan

▶ Blended

- Oakland University, Michigan
- Arizona State University
- Virginia Commonwealth University
- Montana State University

Building Bridges– a Hybrid Example

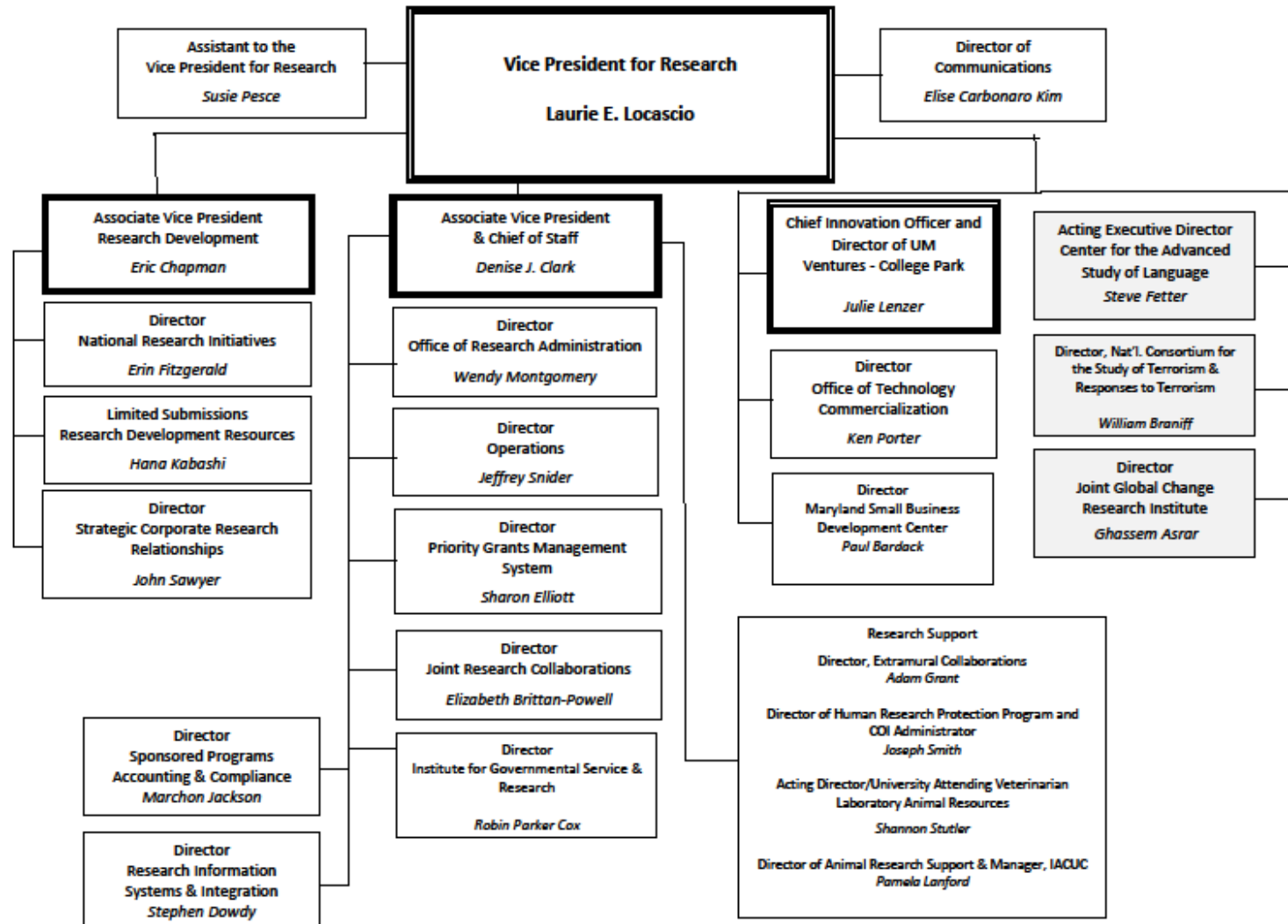


University of Maryland Research Infrastructure



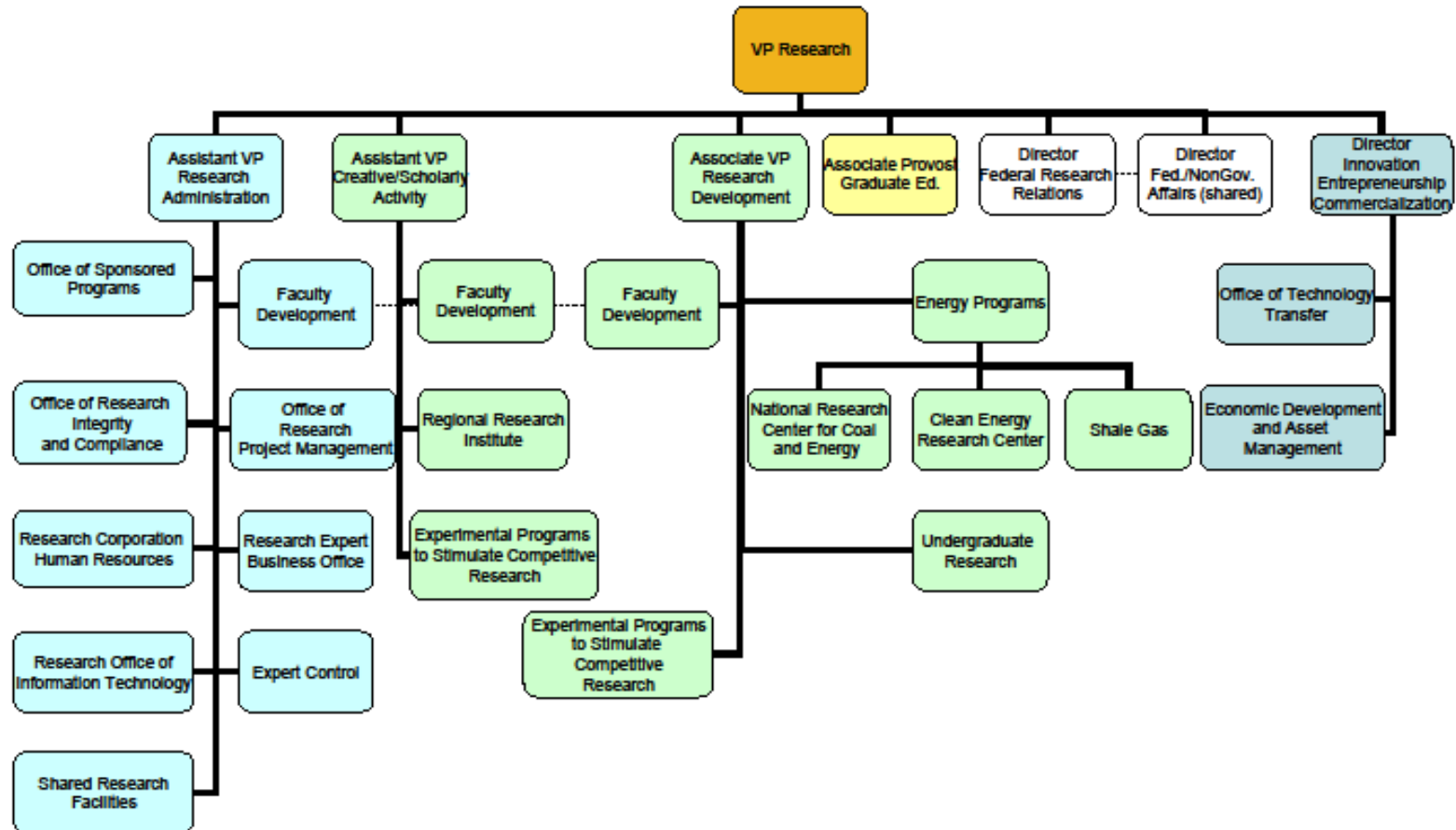
Division of Research

Updated January 29, 2019

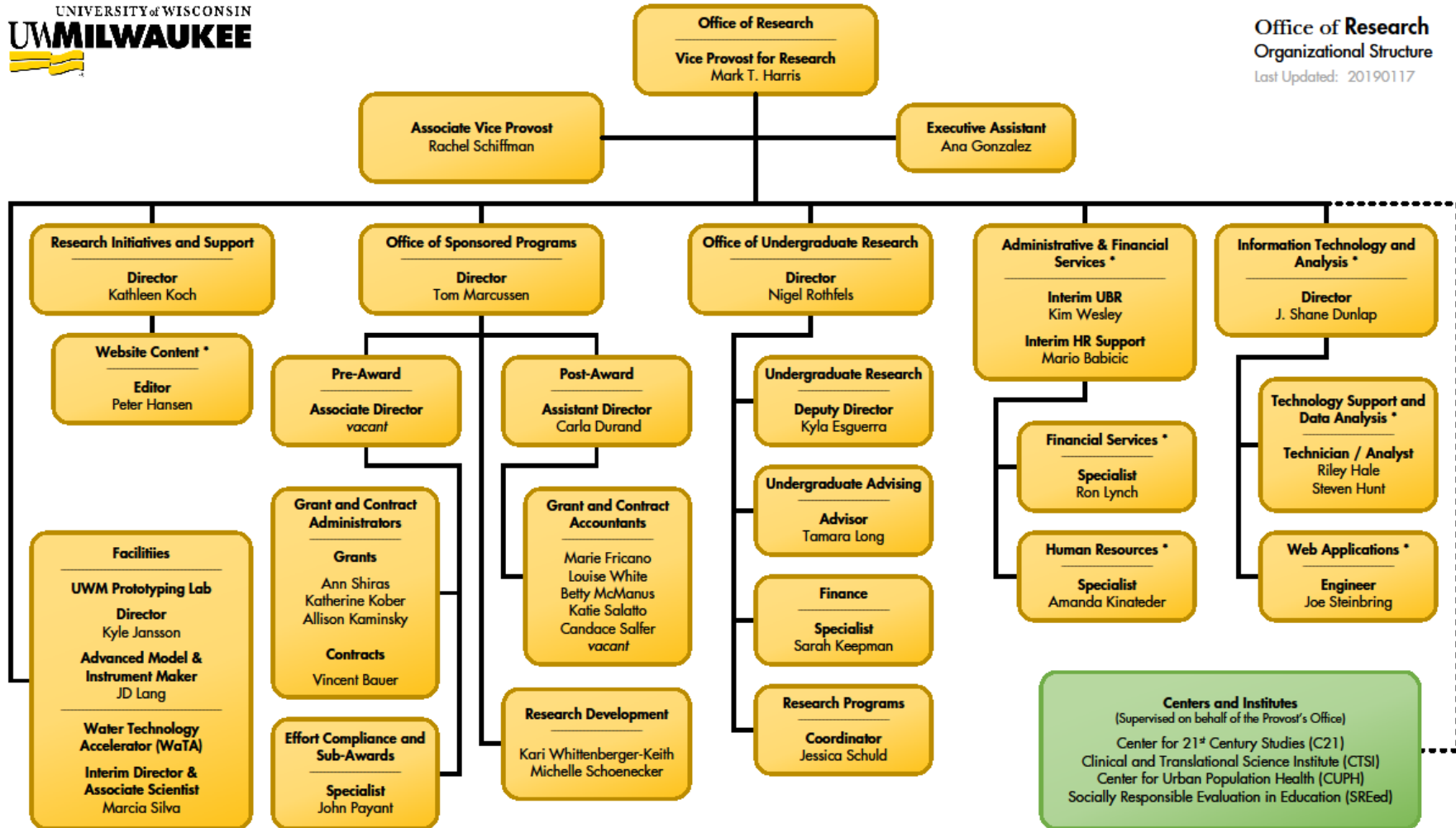


West Virginia University Research Infrastructure

WVU Research Office

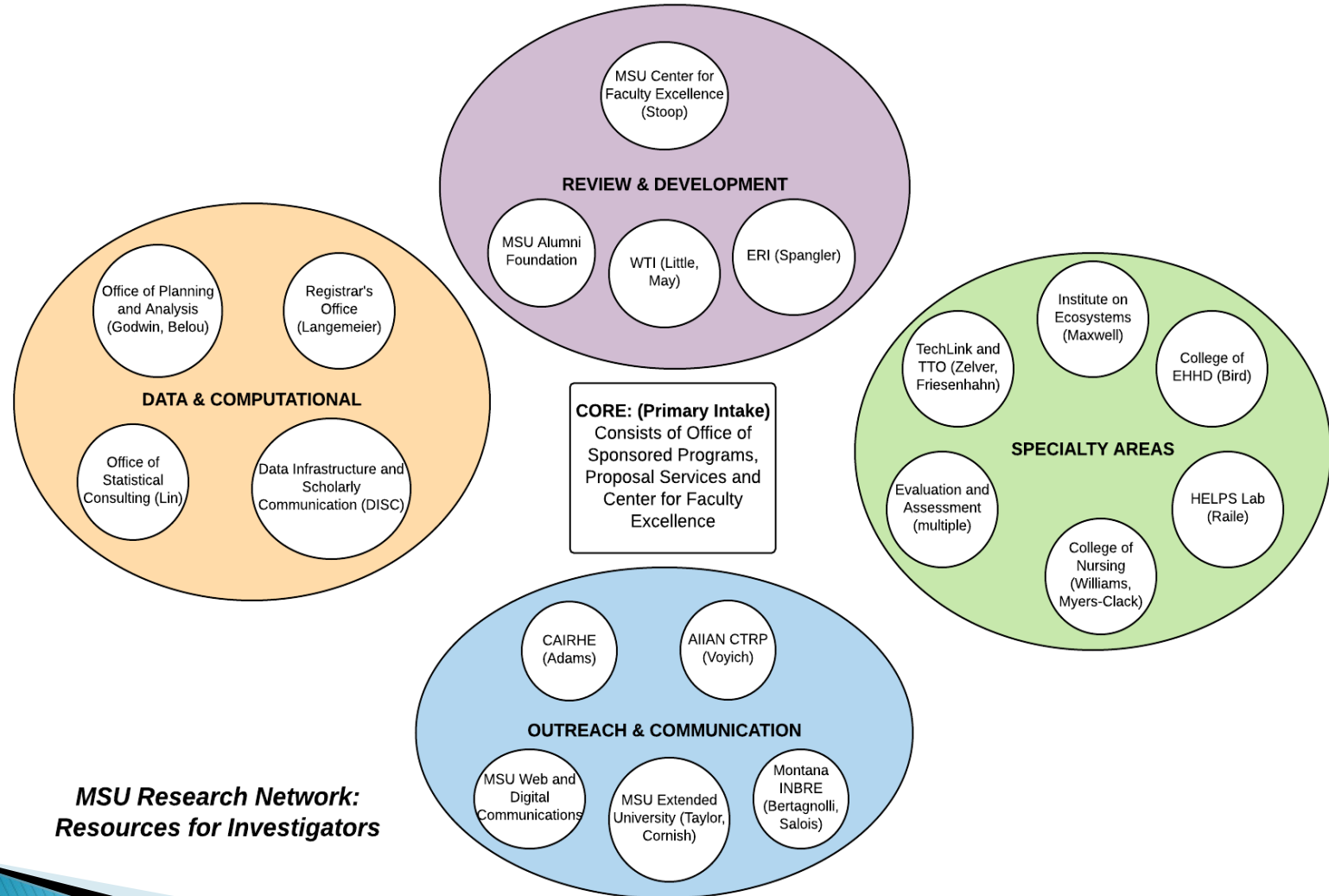


UW–Milwaukee Research Infrastructure



* Administrative and information technology services shared with the UWM Graduate School

Montana State University Research Infrastructure



RD Supports Proposals

- ▶ The specific role RD plays in a given project will depend on a number of factors:
 - Central vs. distributed (may impact when RD sees the project)
 - Integrated vs. separate function/office (integrated RD is often subordinate to the need to get proposals out the door)
 - PI's proposal experience (PIs that are new tend to need more attention and assistance)
 - Size and complexity
 - Number of internal participants
 - Number of external partners

RD Role in Proposal Development

Group Proposals

- ▶ “Herder of cats” = coordinating the team
- ▶ “Poker with pointy stick” = project and time management
- ▶ Central collection point for documents
- ▶ Editing for consistency so the proposal speaks with one voice

Individual Proposals

- ▶ Hands-on work with PI to ensure consistency and compliance with sponsor guidelines
- ▶ Assistance with non-technical content
- ▶ Editing for clarity and accuracy

Project Management as Part of RD

- ▶ Project management definition:
 - ▶ the application of knowledge, skills, tools and techniques to project activities to meet the project requirements.
- ▶ Project manager plans the work and helps the team work the plan
- ▶ Project manager keeps team on task and on time
- ▶ Much of proposal development = project management

Project Management Steps in Proposal Development

Initiation

- Assign a project manager
- Identify stakeholders
- Establish objectives

Planning

- Develop a timeline and list of activities
- Establish roles and responsibilities
- Evaluate available collaboration tools

Execution

- Finalize proposal team
- Establish regular meeting schedule
- Establish and maintain a document repository

Monitoring and control

- Monitor timeline and activities
- Provide corrective measures as needed

Closure

- Conduct compliance review
- Submit proposal
- Conduct formal lessons learned meeting/survey

Examples of Project Management Plans

- ▶ Next slides show examples of project management/proposal development plans
 - University of Delaware
 - Arizona State University

ASU Project Management Office

Research Administration Process

Define Opportunity

Develop Proposal

Submit & Negotiate

Award Setup

Execute Project
Manage Subaward

Close Out

Project Management Process

Project Initiation

Project Planning

Project Execution

Monitoring & Control

Project Closure

Project Management Roles

- Identify opportunities
- Map capabilities
- Define proposal team and theme
- Evaluate ability to win the award

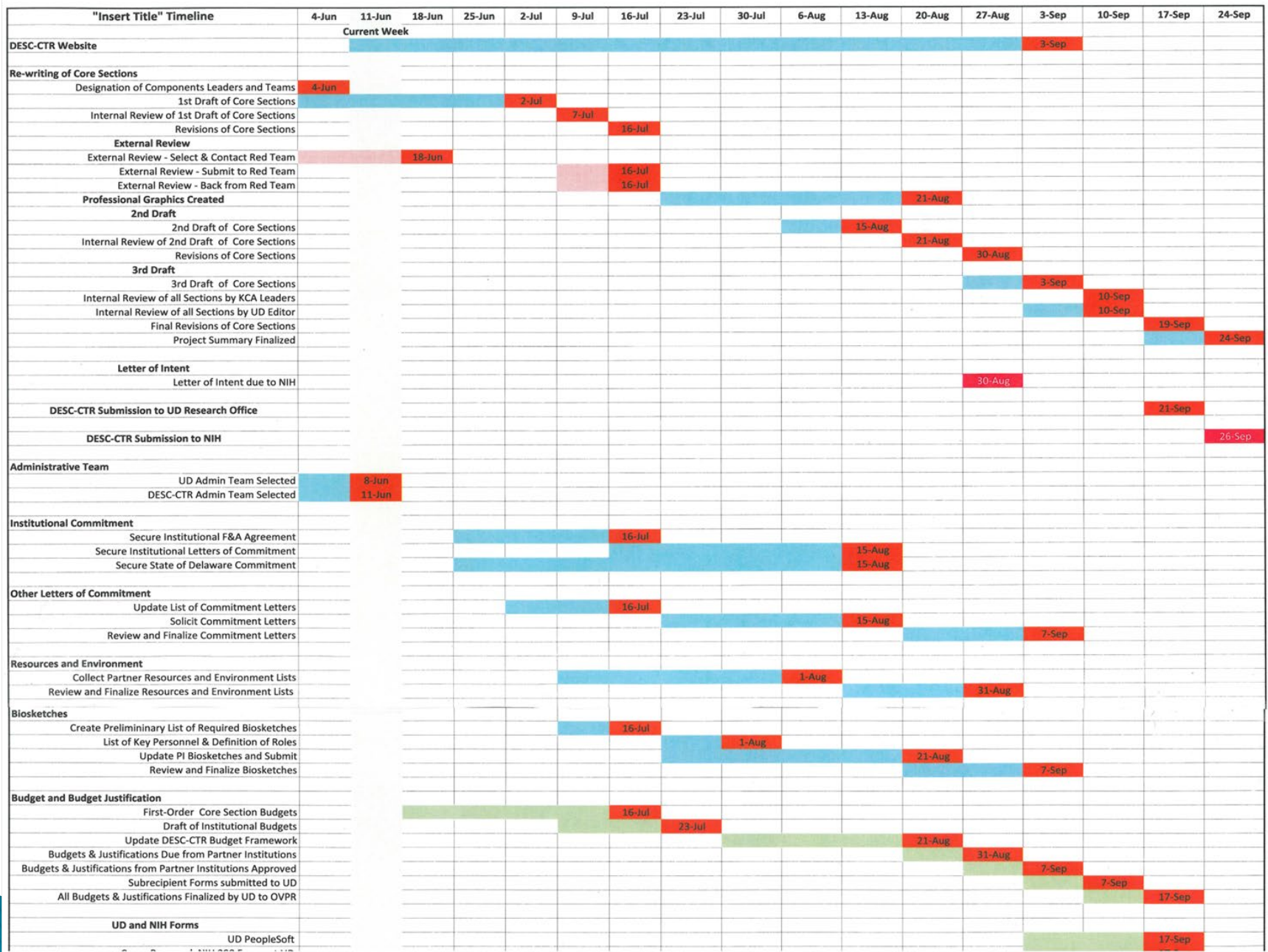
- Refine proposal team and theme
- Define project governance
- Draft project management plan
- Create timeline
- Refine budgets

- Define award and account setup
- Project staffing
- Map contract requirements and project deliverables
- Initiate website
- Kick-off meeting

- Budget and personnel tracking
- Milestone and contract delivery
- Sponsor communications
- Team meetings
- Website upkeep

- Staff transition planning
- Final reporting
- Account reconciliation and closure

<http://researchadmin.asu.edu/pmo>



UD Research Administration Roles and Responsibilities

"Insert Title"

All large scale interdisciplinary and/or multi-institutional proposals are different. This model **should be modified/adapted for each specific funding opportunity**. The key is to define the roles early and communicate them to the entire team!

Help - How to filter

Legend: L = Leads; B= Backup; P= Prepares; C= Collects; A= Ensures Formatting on Admin Pieces; S= Schedules; M= Takes Minutes

Proposal Preparation - Sponsor

Identifies sponsor solicitation and disseminates

Reviews sponsor solicitation

Provides guidance and interpretation of federal regulations, agency specific requirements and UD policies & procedures

Meets to discuss needed proposal preparation resources

Assists PI w/building the internal/external teams

Lead PI

Research Dean for the PI

Research Development Office & Research Development Network

Co-Director of Program

Proposal Manager

Dept. Admin -for Lead PI

OSP C&G

Thrust/Subproject Leaders

Other Key Personnel

Subcontract Site Leaders

Department Administrator for Thrust/Subproject Leaders

Dept. Admin for Key Personnel

Administrative Support Team

Subcontract Administrative Liaisons

Grant Editor/Skilled Writer

Graphic Artist

External Reviewers

IT Professionals

Example of RD Project Management Plan for Individual PI Proposal Development

Proposed Timeline for NSF CREST Proposal Development and Red Team Review							
Tasks: RD staff (RD) and Faculty Team (F)	Number of Weeks Before Deadline						
	6	5	4	3	2	1	0
1. F: Obtain RFP and form CREST team; RD: prepare proposal template and send to F to forward to relevant participants	X						
2. F: develop first draft of proposal; send to RD for review and comments; RD critically review draft and return to F with comments and suggestions for improvement		X					
3. F: Develop second draft of proposal based on RD's edits and comments; return to RD for critique and comments			X				
4. RD: review draft and return to F with additional input and comments			X				
5. F: send revised second draft to RD for review, edit and comments; RD: send revised draft to F for final review edits				X			
6. RD and F: Red Team Review; F assemble proposal team and relevant administrators for review; RD manage review					X		
7. RD: based on Red Team Review process, prepare comments and suggestions for final proposal draft					X		
8. F: return draft to RD for final revisions					X		
9. RD: review final narrative; return to F to assemble complete proposal for submission; F get internal approvals						X	
10. F: conduct final review; submit proposal to NSF						X	
11. F and RD: conduct post-submission analysis and discussion							X

Best Practice for Project Management of Complex Proposals: RD Organizes Scheduled Team Meetings



- “All hands meeting”- faculty and lead administrative team
- “All hands administrative meeting”- include subcontract administrative liaisons
- Use video conferencing and teleconferencing when appropriate
- Create formal agendas and have someone take and send minutes, with action items noted
- Follow up on assigned tasks
- Keep leadership informed about problems

Structured Review Process: Color Codes

- ▶ Purple Team: Assesses the probability of winning and alignment with organizational goals
- ▶ Blue Team #1: Reviews initial capture strategy and capture plan
- ▶ Black Hat Team: Predicts competitors' solutions
- ▶ Blue Team #2: Reviews updated capture plan and solution set
- ▶ Pink Team: Reviews storyboards and mockups to confirm solution set and to validate proposal strategy
- ▶ Green Team: Reviews cost/price solution
- ▶ Red Team: Reviews final proposal draft—including price—to predict how the reviewers will score the proposal
- ▶ Gold Team: Approves final proposal and price
- ▶ White Team: Compiles lessons learned from capture planning through proposal development to contract award

Discussion: Internal Reviews

- ▶ How can the color-coded review process apply to proposals?
- ▶ Does your institution use any type of internal review process for individual or collaborative proposals?
- ▶ Does your institution use external reviewers for any proposals?
- ▶ What do you see as advantages and disadvantages?
- ▶ Do you think this is a best practice? Why or why not?

Staffing the RD Function

- ▶ There's no one-size-fits-all metric for becoming/hiring a successful RD professional
- ▶ Depending on the position level, relevant qualities may include:
 - Experience as a researcher on some level
 - Good research administration background
 - Strong knowledge of funding agencies
 - Some level of subject-matter expertise
 - Previous experience as a reviewer
 - Excellent writing/editing skills
 - Project management/time management skills
 - People skills: tact, communication, sense of humor

Other Desired Qualities

- ▶ Copes with stress or pressure in a way that is transparent to others
- ▶ Exercises a high degree of initiative, collaboration, problem-solving skills, and multi-tasking within established deadlines
- ▶ Ability to inspire colleagues while driving the continuing development of our unique culture of collegiality and innovation across the university
- ▶ Ability to organize, analyze, and interpret complex scientific, medical or technical data is required
- ▶ Requires flexibility and time-management skills, including the ability to prioritize among a large number of diverse responsibilities
- ▶ Must be able to thrive in a fast-paced, deadline-driven environment as well as work collaboratively and adapt to changing processes and procedures

Sample Position Descriptions

- ▶ Note the variety of responsibilities and personal qualities and experience even for the same level of position
- ▶ Look for key RD words:
- ▶ collaborative, enhancing, increasing, impactful, catalyze new collaborations, discovery and innovation, research capacity, initiatives, incentives, metrics for success, synergies, partnerships, strategies, synthesis and dissemination, vision and priorities, program building, strategic planning, program evaluation, national funding context

Research Development Specialist

- ▶ Reporting directly to the Dean, and working collaboratively with Dean's Office staff, academic unit administrative staff, and the Office of Sponsored Projects, this position provides key frontline support for the College's goal of increasing our impactful competitive research. The following list describes key position responsibilities, but may be modified as needed and as appropriate by the Dean.
- ▶ Work closely with faculty, staff, and external partners in developing, editing, and reviewing proposals to be submitted to external sponsors.
- ▶ Develop and edit core proposal components, including budgets and budget justifications, biographical sketches, facilities and resources statements, and current and pending support.
- ▶ Edit manuscripts, reports, and abstracts related to research progress and findings.
- ▶ Provide outreach to other university departments and external partners as required for proposal submission, monitor proposal progress, and collect letters of support and other required materials.
- ▶ Work with internal experts and external consultants, program directors, and collaborators to offer workshops and seminars to enhance research capacity development efforts.
- ▶ Develop broad knowledge of CEIAS faculty, research, contacts, and resources.
- ▶ Prioritize support of individual junior faculty, new investigators, and large complex multi-investigator proposals.
- ▶ Promote a professional, welcoming, and responsive atmosphere for faculty, staff, students, and visitors

Director of Research Development

- ▶ The Director of Research Development (DRD) will help to grow the size and impact of university research by creating opportunities for and supporting discovery and innovation by university researchers through research development.
- ▶ The DRD works closely with the Associate Vice Chancellor for Research Development and Contracts and develops and leads the activities, operation, and staff of the research development team.
- ▶ In general, the role of the DRD is to create new initiatives and incentives that foster expanded institutional research capacity, catalyze new collaborations, increase the competitiveness of extramural funding proposals, implement and provide ongoing oversight of projects, and identify metrics for success.
- ▶ A long range goal of the DRD is to build a centralized research development function for the university.

- ▶ The DRD strives to generate new streams of research support from federal, state, foundation, and industrial sources. He/she works closely with researchers and staff to facilitate collaborations, identify potential funding opportunities, and work with funding agencies (government and private) to improve the university's funding success.
- ▶ The DRD works closely with government agencies (e.g., NSF, DOD, DOE, NIH etc.) and private sponsors to understand funding strategies and initiatives and to identify needs and synergies with university researchers. Facilitate development of partnerships between researchers and other academic, private sector, and government agencies. Establish and maintain relationships with key federal program officers, agency staff, clients and key industry representatives.
- ▶ Nurture multi-disciplinary projects corresponding to the university's strategic research initiatives, including support for large-scale projects through strategy development, budget creation, oversight of preparation and submission.
- ▶ The DRD works closely with university-wide efforts to implement strategies for faculty research training and leadership development. He/she supports new training programs that help faculty who are early in their research career to develop and/or improve their skills in writing winning proposals. The DRD will develop workshops to support proposal development, and understands how university priorities and information needs fit into the larger national education, research, and funding contexts in order to provide advice to faculty and researchers.
- ▶ Supervise other research development staff. Oversee the university's internal competitions program.
- ▶ Administer strategic seed funding initiatives to facilitate interdisciplinary research at the university with high potential for external support. He/she also analyzes performance of seed funding efforts.
- ▶ Represents the OVCR at meetings and functions as needed, especially in facilitating research collaborations across schools and institutions.

Director, Research Development

Starting Salary Range: \$120,000–\$155,000/annually, commensurate with qualifications and experience.

- ▶ Involves managing the Research Development enterprise at UXXX. This includes oversight and coordination of research development programs, including formulating program goals and strategies, program development, planning and evaluation, peer review and applicant relations, grant application and award management, and synthesis and dissemination of research findings. Budgetary responsibility for the Research Development enterprise.
- ▶ Leadership role within the Research Development enterprise, which at build-out will involve >6 direct reports, and influence over ~4 other Divisional RD related employees. Establishes vision and priorities for the Research Development enterprise. Collaborates with faculty and OR leadership on RD program strategies and goals, long-term planning, and policy and procedures. Has independent responsibility for large, complex research grant programs/initiatives. Directs short- and long-term strategic planning for grant-making, program evaluation, and research strategies.
- ▶ Qualifications / Competencies Advanced degree in related area and/or equivalent experience/training. Terminal degree in a related field (PhD, JD, MD, etc.). Academic background and recognized expertise in selected area of research.
- ▶ Demonstrated expertise with program building within a leading academic institution for handling administrative, budgetary, human resources and financial principles and practices.
- ▶ Expert oral and written communication skills.
- ▶ Demonstrated expertise building collaborations between academia, industrial and / or governmental agencies.
- ▶ Leadership experience in academic and/or government agencies.
- ▶ Expert ability to work with dynamic and diverse group of faculty, staff and students.

Summary: RD Management and Infrastructure

- ▶ RD is a fast-growing, integrated and complex approach to increasing research activity and success in the US and globally
- ▶ RD represents the future of the research enterprise in all types of institutions
- ▶ RD is a collaborative process, involving both internal and external constituencies
- ▶ RD is most successful when aligned with current institutional culture
- ▶ RD offers challenging and satisfying career opportunities at every professional level
- ▶ You most likely are already doing some elements of RD in your current position

Final thoughts

- ▶ Research development is both an institutional philosophy and a process
- ▶ Institutions that are serious about increasing research activity and success need:
 - an institution-wide approach
 - a strategic plan for research development that includes all relevant constituencies
 - serious and long-term investments in people, space and services
 - engagement with external partners
 - appropriate metrics and evaluation

Questions and Comments

- ▶ Returning to the learning objectives, do you have any questions or comments about the emerging role of research development?
- ▶ Do you have a better understanding of what is meant by research development?
- ▶ Have you noted at least three best practices that could be applied in your own institution?
- ▶ Would you consider a career path in this approach?

Thanks

For Questions and Follow-up:

Dr. Marjorie Piechowski
piechow4@uwm.edu
414-963-9055