2021-2022 Research Report to UKRF Board of Directors

Lisa A Cassis, PhD

Professor, Department of Pharmacology and Nutritional Sciences

Vice President for Research

UK Research

Office of the Vice President for Research

The UKRF Budget

- Facilities and administrative (F&A) costs from external grants and contracts support the UKRF budget.

- These are costs that the university has incurred because of the research within a given grant or contract which took place at UK.

- We follow federal guidelines to negotiate these costs every 3 years with the federal government. We are approaching this negotiation next year.

- Our current F&A rate is 53%, meaning for each $1 that comes to the institution for specific research within a grant the institution receives an additional $0.53. Not all expenditures on grants and contracts accrue F&A, so our actual rate ranges between $0.19 - $0.24.

- These funds become the UKRF budget and are used to support research across campus.

Eli Capilouto
President

Lisa Cassis
Vice President for Research

UK Markey Cancer Center
B. Mark Evers, Associate VPR for Clinical Strategic Development & Oncology Research

UK Center for Clinical and Translational Science
Philip Kern, Associate VPR for Clinical & Translational Research

University of Kentucky Research Foundation

Stacy Gaylor, Executive Admin. Assistant

Research Administration

Office of Sponsored Projects Administration
Kim Carter
Assoc. VPR and Executive Director

Office of Research Integrity
Helene Lake- Bullock
Asst. VPR and Executive Director

Attending Veterinarian
Mark Suckow
Assoc. VPR

Fiscal Affairs
Judy Duncan
Asst. VPR and Director

Federal Relations
Eric King
Asst. VPR for Research Federal Relations & Institutional Research Priorities
Executive Director

Chief of Staff and Research Analytics
Baron Wolf
Asst. VPR
Director, Research Analytics
Chief of Staff
Alex Dixon, Sr. Decision Support Analyst
Stephanie Thompson, Project Manager

Multidisciplinary Research Space Oversight
Lisa Cassis, VPR
Baron Wolf, Asst. VPR
Facilities Management
Research Space Taskforce
Research Financial Services*

Research Development and Communications
Rodney Andrews, Senior Assoc. VPR

Research Innovation and Economic Impact
Ian McClure
Assoc. VPR

Office of Technology Commercialization
Taunya Phillips
Director

Research Communications
Alicia Gregory**
Director

Proposal Development Office
Kathy Grzech
Asst. VP for Programmatic Grant Development & Executive Director

Research Information Services
Billy Clark
Director

Undergraduate Research
Chad Risko
Faculty Director

Special Programs and Operations
Linda Dwoskin, Senior Assoc. VPR

Research Support Cores
Alan Daugherty
Assoc. VPR

Division of Laboratory Animal Resources
Bernie Doerning
Director

Diversity and Inclusion
Danelle Stevens-Watkins
Assoc. VPR
UNITE RPA

Research Leadership Academy
Linda Dwoskin
Senior Assoc. VPR
Kathy Grzech
Asst. VPR for Programmatic Grant Development

Nancy Schoenberg
Assoc. VPR
Lunch and Learn Series
IPEP, RSP, IGNITE

Centers and Institutes
Allan Butterfield
Assoc. VPR

Research Priority Area Initiative
Lisa Cassis
VPR
Allan Butterfield
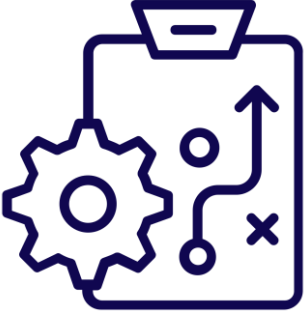Assoc. VPR
Philip Kern
Assoc. VPR

Research Strategic Plan

Strategic Initiative 1: Improve the quality of the research infrastructure across campus.

Strategic Initiative 2: Foster an inclusive culture of research success to retain and develop outstanding faculty, staff, and students

Strategic Initiative 3: Invest strategically in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of those in the Commonwealth.

Strategic Initiative 4: Strengthen engagement with communities and translate outcomes of research and creative works for the benefit of the citizens of the Commonwealth.

UK PURPOSE	UK Research Strategic Initiatives			
	#1: Improve the quality of the research infrastructure across campus	#2: Foster an inclusive culture of research success to retain and develop outstanding faculty, staff, and students	#3: Invest strategically in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of those in the Commonwealth	#4: Strengthen engagement with communities and translate outcomes of research and creative works for the benefit of the citizens of the Commonwealth
Putting Students First		✔		
Taking Care of our People	✔	✔	✔	✔
Inspiring Ingenuity	✔	✔	✔	✔
Trust, Transparency, & Accountability	✔	✔	✔	✔
Many People, One Community		✔	✔	✔

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Strategic Initiative 1: Improve the quality of the research infrastructure. **Why**?

- The infrastructure must:
  - Keep apace with the growth of research.
  - Have modern systems that streamline work of faculty, staff and students while maintaining compliance with funding agencies and guidelines.
  - Communicate effectively the impact of our research.
  - Be organized in a manner that facilitates success and is flexible to adapt to emerging areas of research and opportunity, changes in the federal landscape, etc.

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UK PURPOSE	Strategic Initiative #1: Improve the quality of the research infrastructure across campus			
	Goal #1: Reassess and/or expand VPR support systems, admin staff offices, and workspaces to improve efficiency of operations.....	Goal #2 - Assess equipment needs within individual labs and core facilities that better enable campus-wide research	Goal #3 - Facilitate Big Data analytic hub/convergent research	Goal #4 - Support research career development and the development of new research efforts
Putting Students First				
Taking Care of our People	✓			✓
Inspiring Ingenuity	✓	✓	✓	✓
Trust, Transparency, & Accountability	✓			✓
Many People, One Community				

UK Research
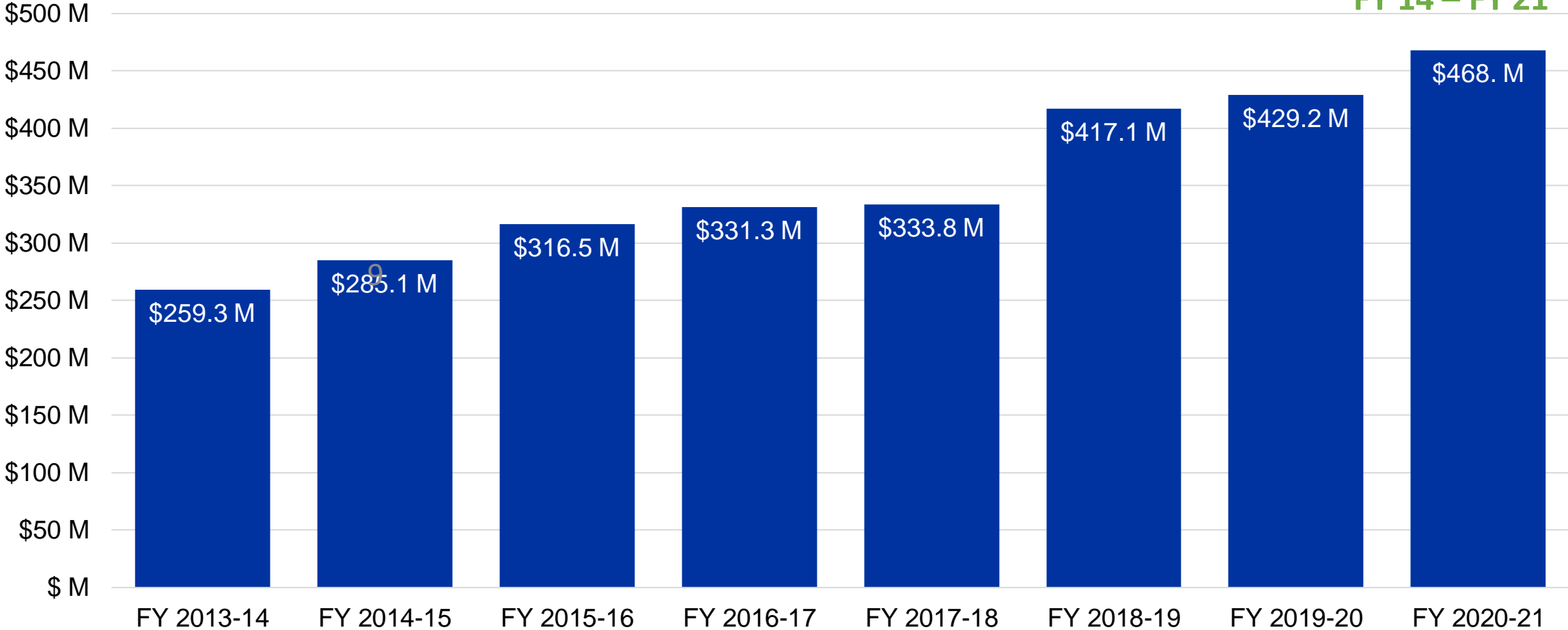
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Strategic Initiative 1: Improve the quality of the research infrastructure. **How (as relates to FY22/23 UKRF budget)**?

- Increase staff within units that are essential for grants administration (I.A.7, B.1)

- Continued expansion of Modern Research Space (completion of HKRB), purchase of Angliana facility (II.A=C.9b), renovation for the new NSF funded EduceLab (II.C.9c).

- Modernization of research facilities that make our researchers competitive for federal funding opportunities (Biosafety Level 3 Facility for COVID-19 research, Sanders Brown Center on Aging, funded commitments) (II.C.5)

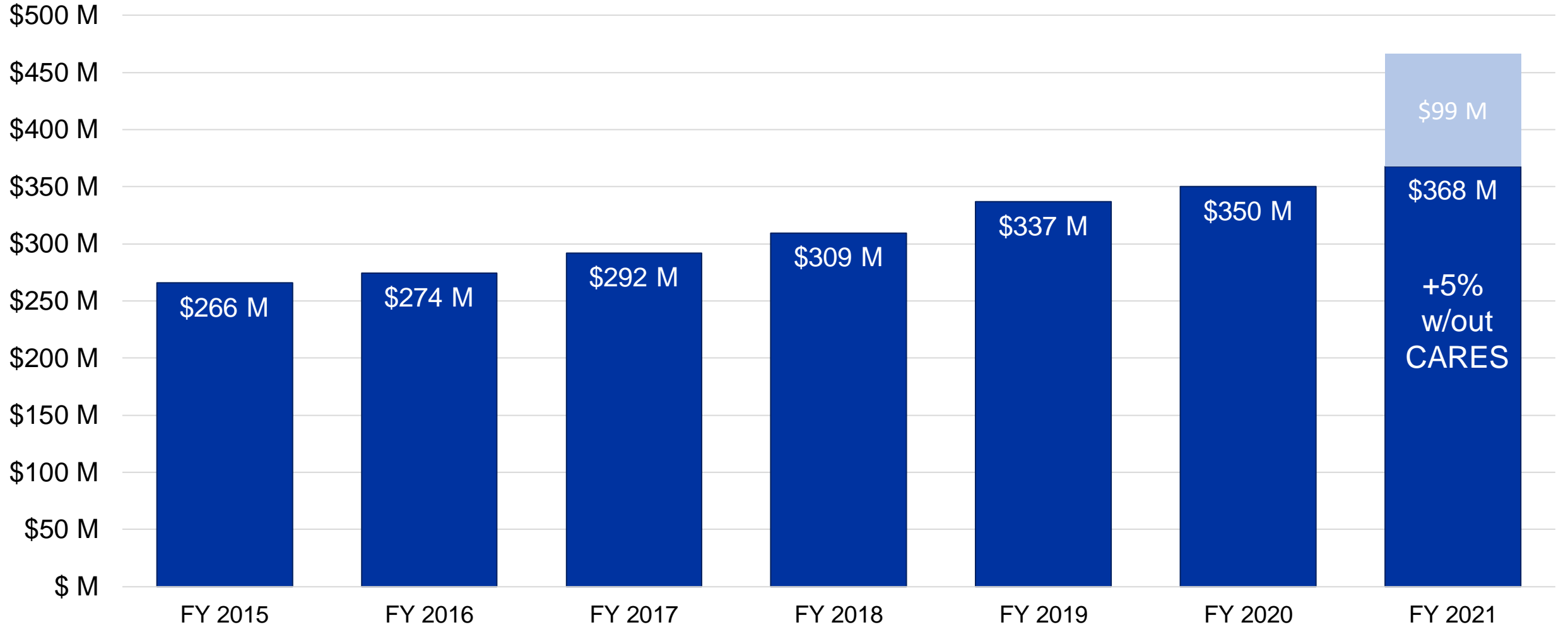# Research Growth in Grant and Contract Awards

UK Awarded Grants and Contracts

**80.5% Growth
FY 14 – FY 21**

Chart: UK Awarded Grants and Contracts

Fiscal Year	Amount
FY 2013-14	$259.3 M
FY 2014-15	$285.1 M
FY 2015-16	$316.5 M
FY 2016-17	$331.3 M
FY 2017-18	$333.8 M
FY 2018-19	$417.1 M
FY 2019-20	$429.2 M
FY 2020-21	$468. M

Source: University of Kentucky OSPA database, 06/30/2021

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Research Growth in R&D Expenditures

■ Total ■ CARES

Bar chart showing R&D expenditures by fiscal year:
- FY 2015: $266 M
- FY 2016: $274 M
- FY 2017: $292 M
- FY 2018: $309 M
- FY 2019: $337 M
- FY 2020: $350 M
- FY 2021: $368 M (Total) + $99 M (CARES); +5% w/out CARES

Source: University of Kentucky OSPA database, 06/30/2021

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UK Researchers Compete for Federal Peer-Reviewed Funding
R&D Expenditures by Source of Funds

Source: University of Kentucky, OSPA database.

UK Research

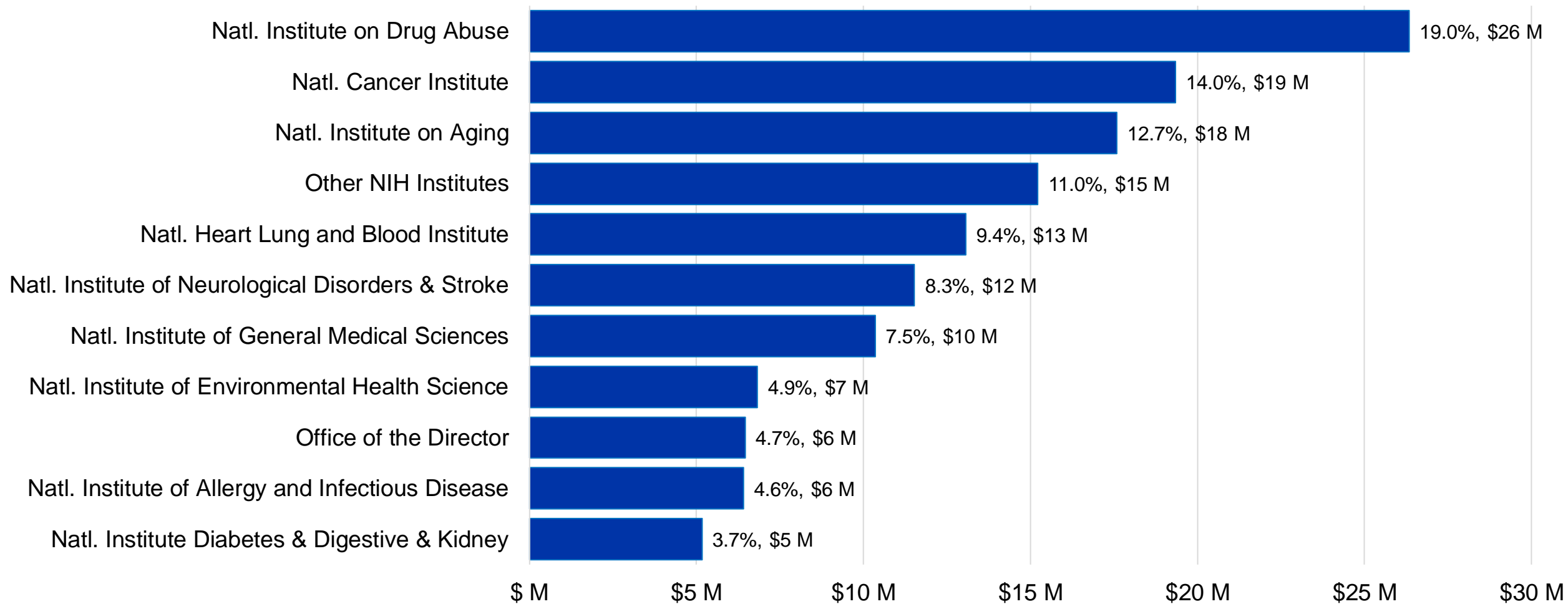**Office of the Vice President for Research**
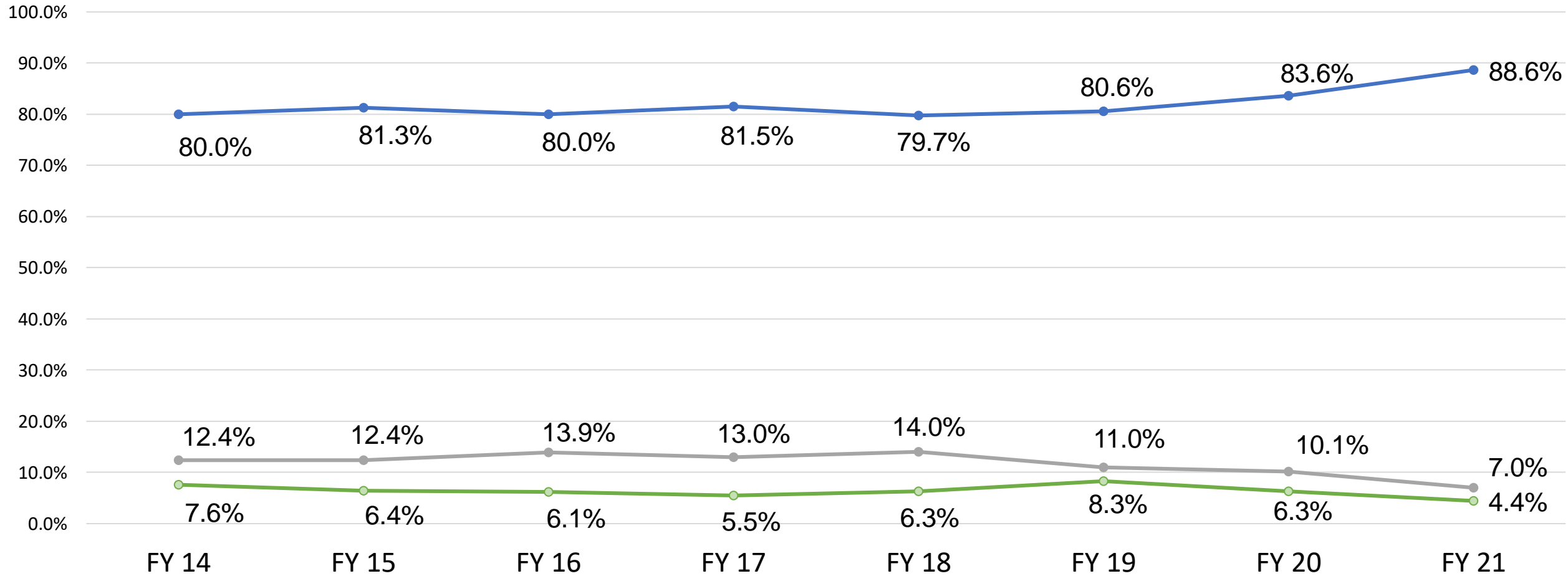
The National Institutes of Health (NIH) is the largest source of Federal R&D expenditures by UK researchers (FY 2021)

Source: University of Kentucky, OSPA database.

Office of the Vice President for Research
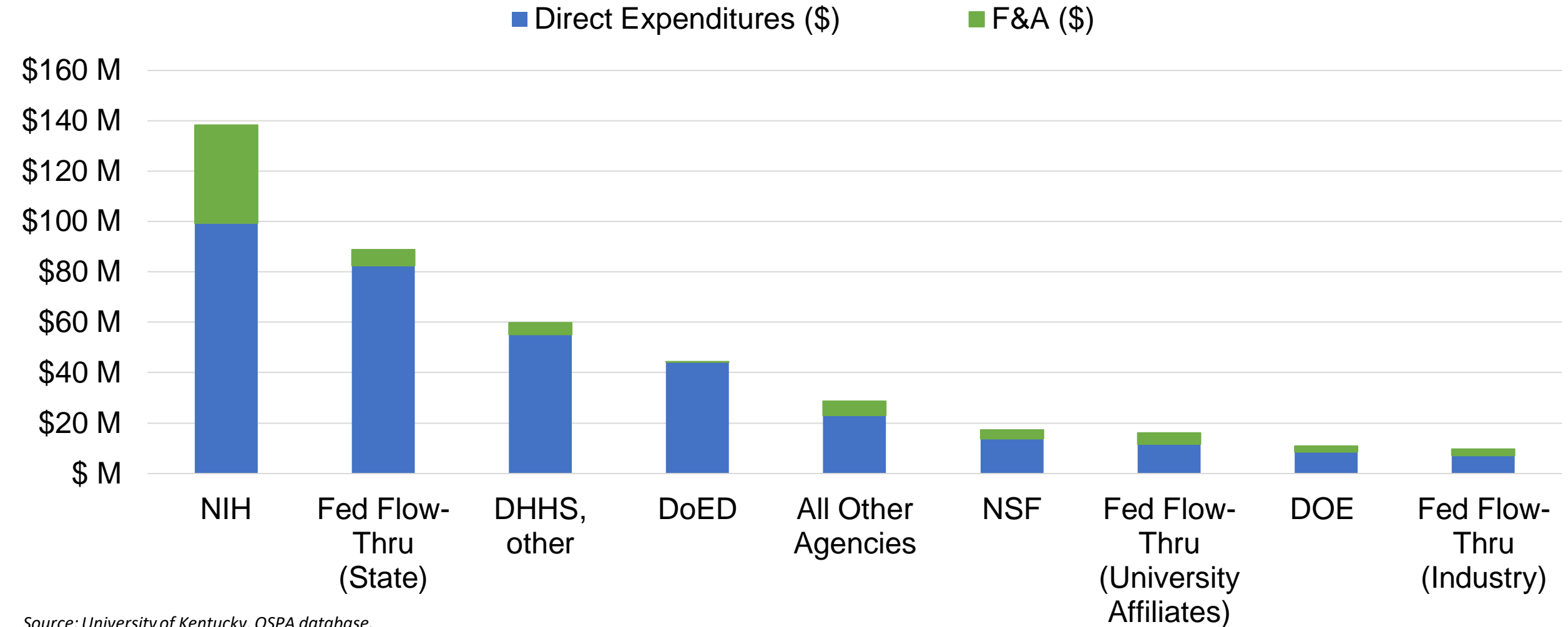
R&D Expenditures by NIH Institute
Fiscal Year 2021

Institute	Value
Natl. Institute on Drug Abuse	19.0%, $26 M
Natl. Cancer Institute	14.0%, $19 M
Natl. Institute on Aging	12.7%, $18 M
Other NIH Institutes	11.0%, $15 M
Natl. Heart Lung and Blood Institute	9.4%, $13 M
Natl. Institute of Neurological Disorders & Stroke	8.3%, $12 M
Natl. Institute of General Medical Sciences	7.5%, $10 M
Natl. Institute of Environmental Health Science	4.9%, $7 M
Office of the Director	4.7%, $6 M
Natl. Institute of Allergy and Infectious Disease	4.6%, $6 M
Natl. Institute Diabetes & Digestive & Kidney	3.7%, $5 M

Source: University of Kentucky, OSPA Database

UK Research

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Grant Awards thus far in FY22
July 1 – April 30 of Each Year

■ Federal   ■ Non-Federal   ■ Total
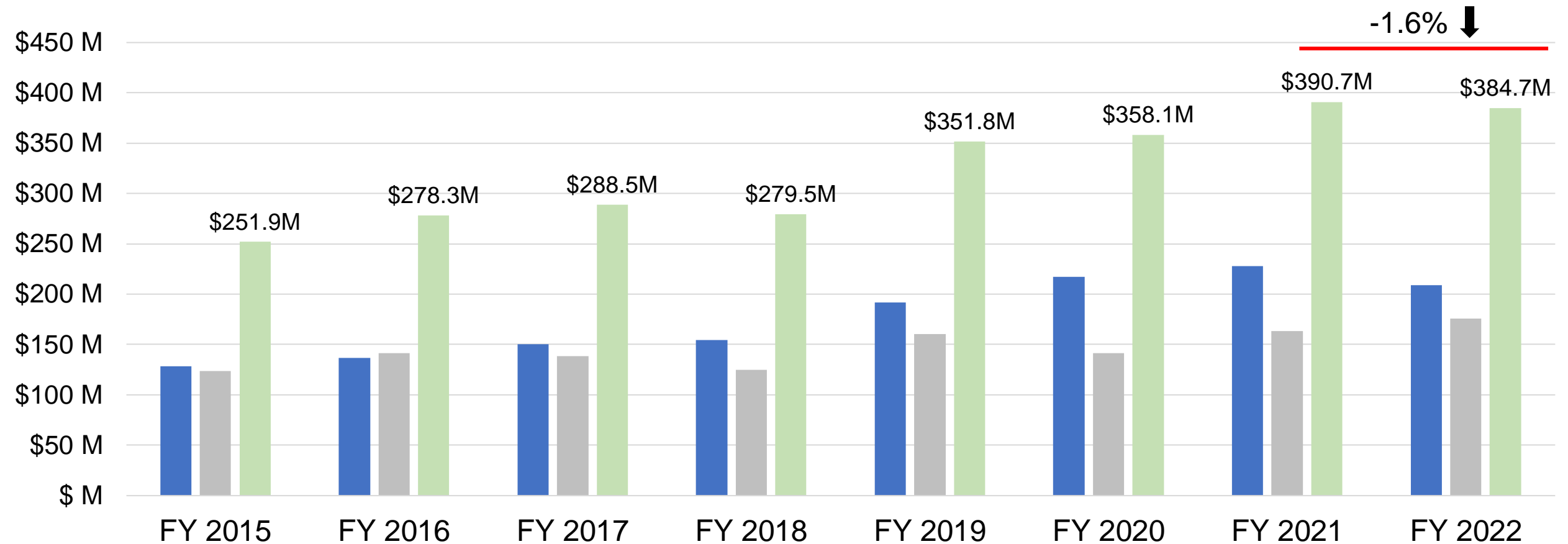
-1.6% ↓

$450 M
$400 M
$350 M
$300 M
$250 M
$200 M
$150 M
$100 M
$50 M
$ M

$251.9M — FY 2015
$278.3M — FY 2016
$288.5M — FY 2017
$279.5M — FY 2018
$351.8M — FY 2019
$358.1M — FY 2020
$390.7M — FY 2021
$384.7M — FY 2022

Source: University of Kentucky, OSPA database.

UK Research

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Grant Awards thus far in FY 22

Legend:
- FYTD 2021/22 (green)
- FY 2020/21 (blue)
- Past Years (gray)

FY 2021 $468.0M

FYTD 2022 $384.7M
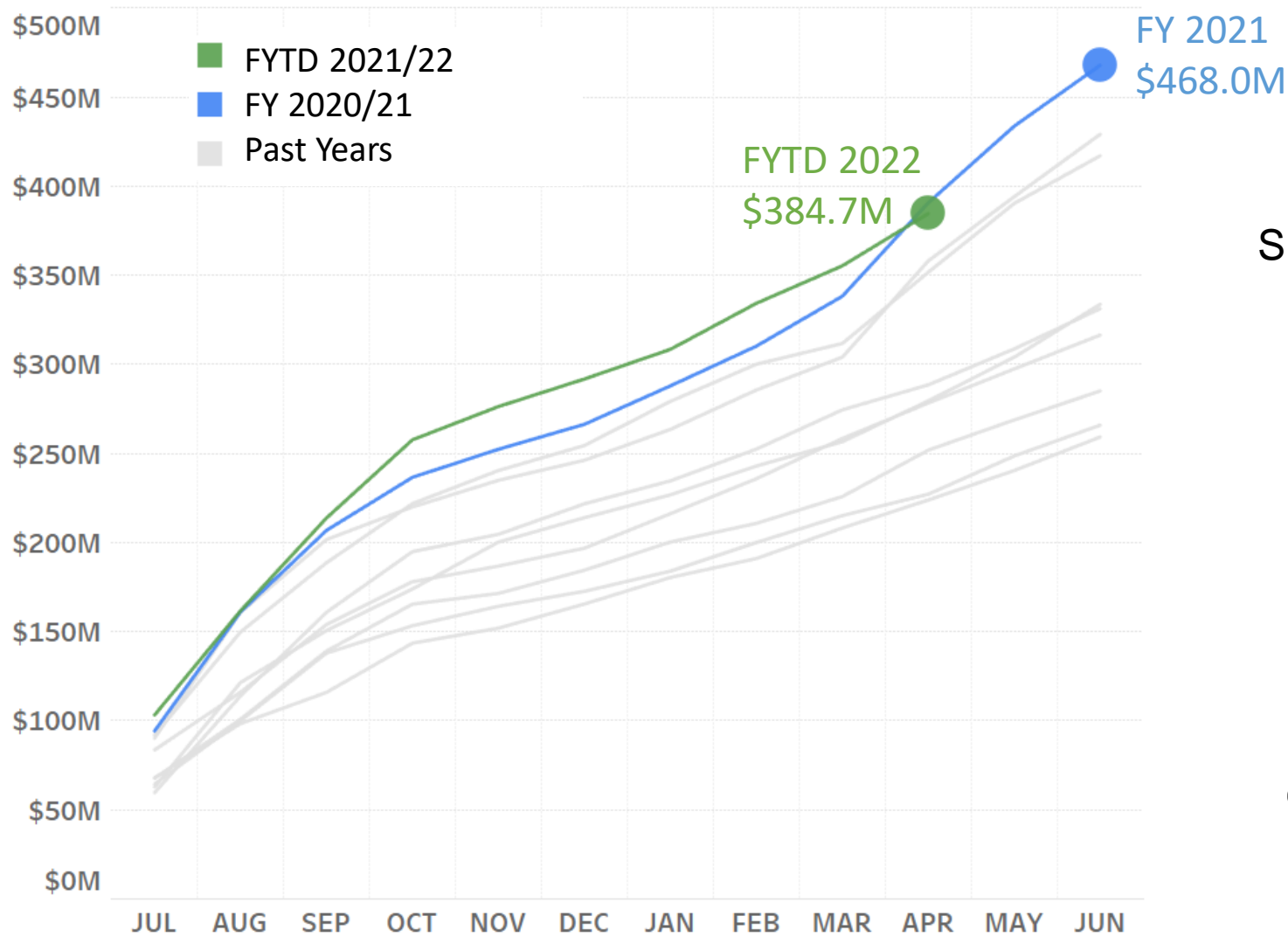
SPONSORED AWARD DOLLARS BY TYPE
Compared to the same time last year

Federal Awards -8.3%

State Awards +11.6%

Industry Awards -9.1%
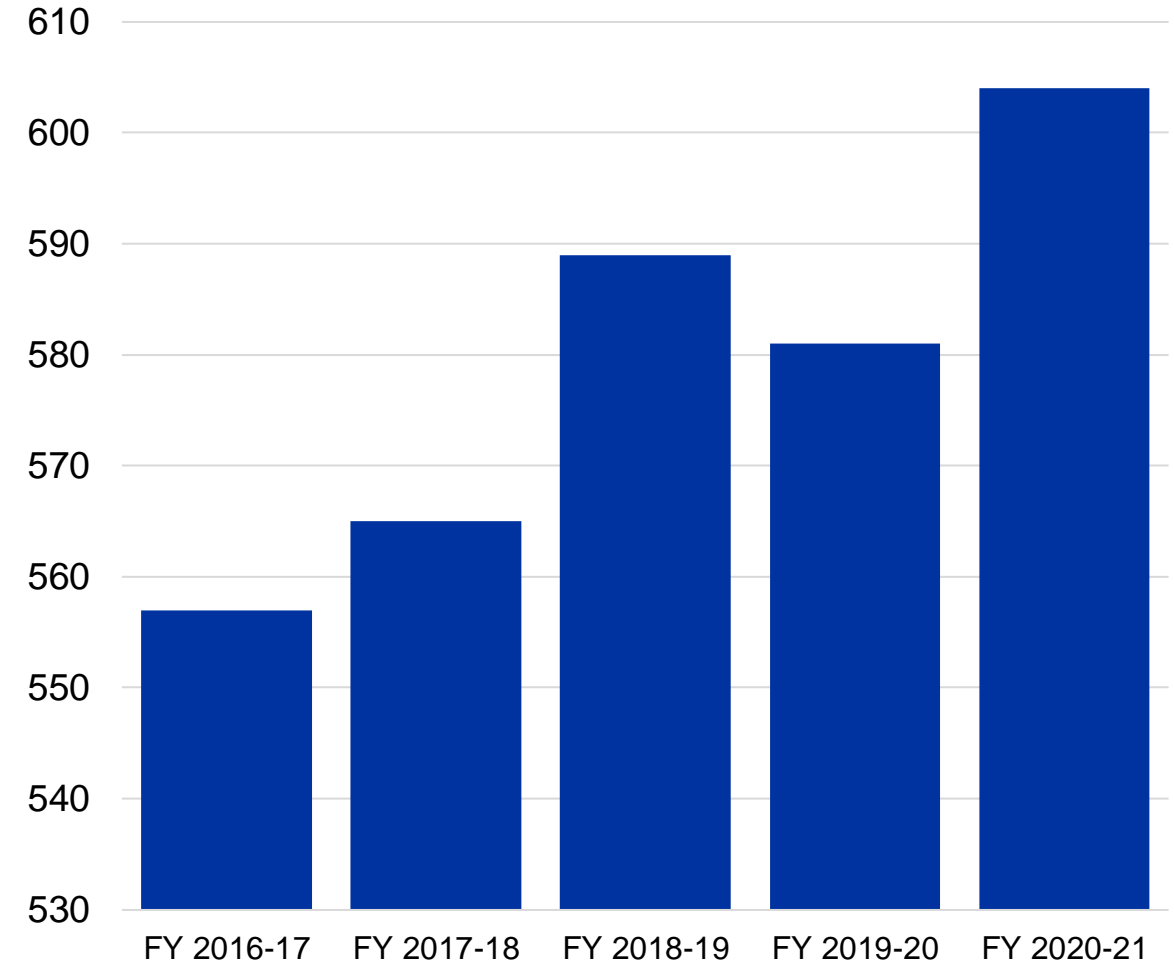
Other Award Sponsors +17.9%

Source: University of Kentucky, OSPA Database, 4/30/2022

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Grant Award Projects and Diversity of Sponsors

Number of Projects
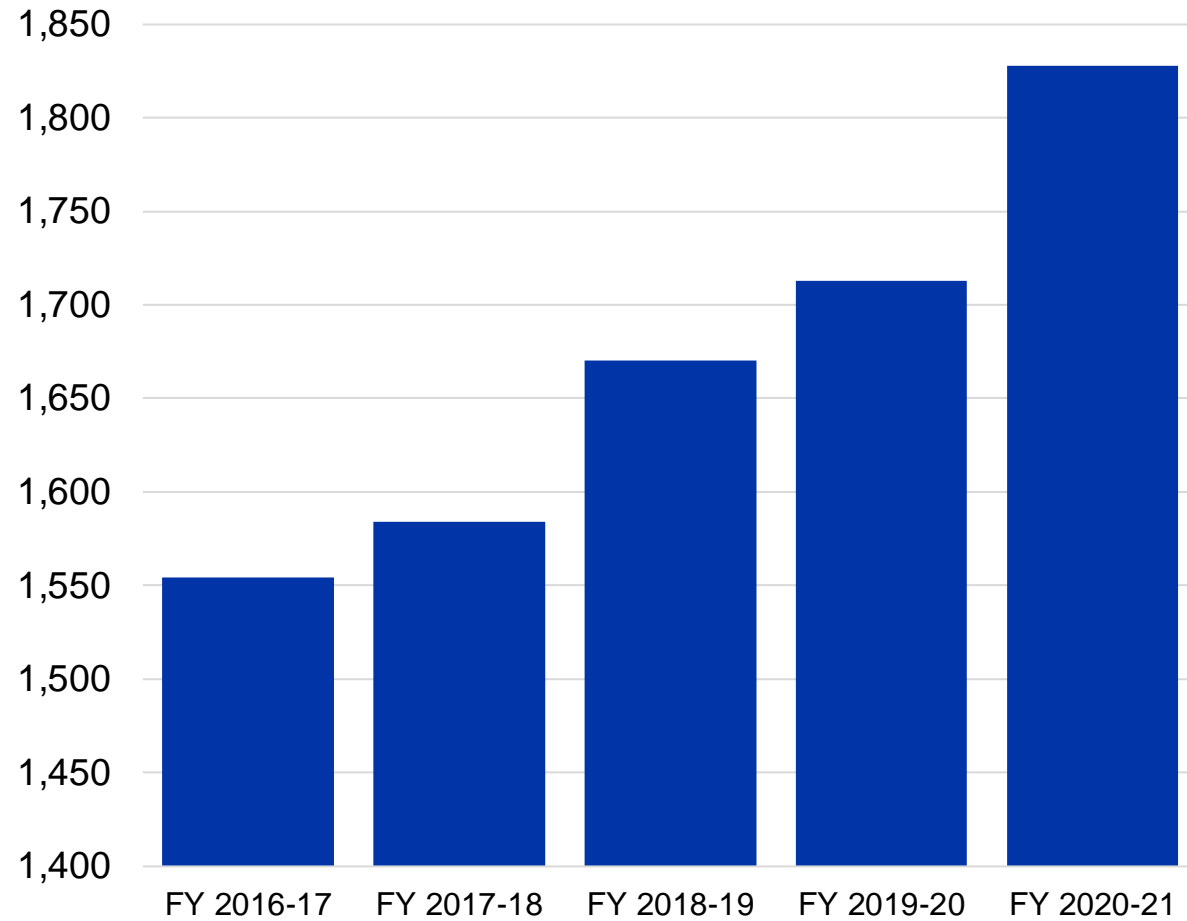
Number of Sponsors

Source: University of Kentucky, OSPA Database

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Transformational Opportunities: Changes to our Grants Administration Structure to Promote Research Growth

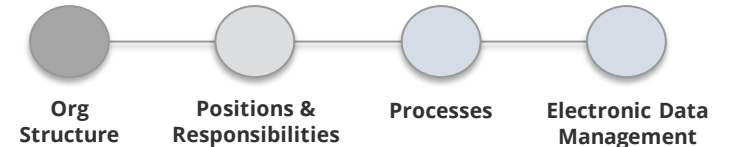| Opportunity	Solution	Scope Area
1 Realign Central Research Administration Functions and Responsibilities	Realign certain research administration responsibilities within central research administration organizations (i.e., Office of Sponsored Projects Administration and Research Financial Services).	Org Structure — Positions & Responsibilities — Processes — Electronic Data Management
2 Reimagine Local Research Administration Support	The University of Kentucky should build on its foundational local research administration support structure and further develop roles to provide standardized and consistent support for research faculty in all colleges.	Org Structure — Positions & Responsibilities — Processes — Electronic Data Management

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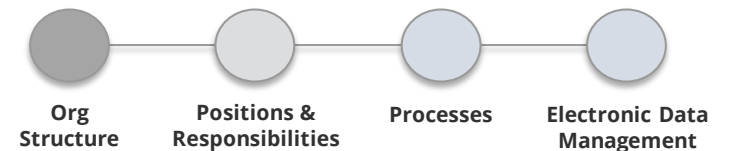
Transformational Opportunities: Grants Administration Structural Opportunities

3 | **Reevaluate Staffing Levels Across Research Administration Functions and Implement a Capacity Model to Estimate Future Staffing Levels and Gaps** | Implement a new research administration staffing plan in order to provide adequate staffing levels in support of all key research administration functions. The University of Kentucky should also consider implementing a capacity model to estimate staffing needs and gaps as the research enterprise continues to scale.
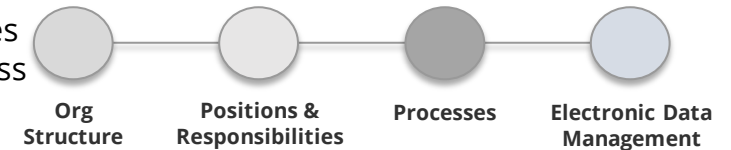
Org Structure — Positions & Responsibilities — Processes — Electronic Data Management
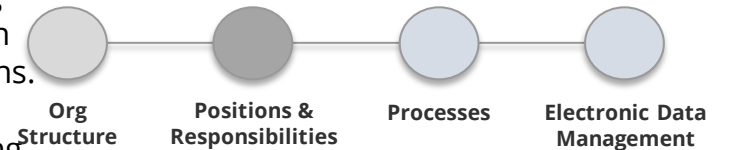
4 | **Implement a Formal Job Architecture for All Key Research Administration Positions** | Consider implementing a new job design approach for research administration, which includes the development of a new job architecture framework, defining job leveling and job titling standards, and the process of standardizing and harmonizing jobs across the research administration enterprise.

Org Structure — Positions & Responsibilities — Processes — Electronic Data Management
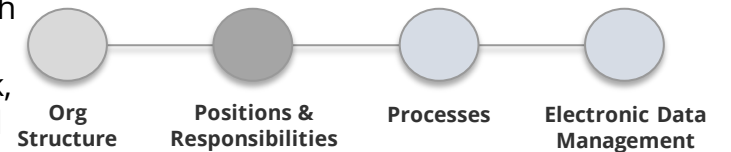
5 | **Implement Highlighted Business Process Improvements** | Implement highlighted improvement opportunities and initiatives stemming from the Business Process Maturity Workshops across targeted research administration sub-processes to increase standardization, efficiency, and use of technology.

Org Structure — Positions & Responsibilities — Processes — Electronic Data Management

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Transformational Opportunities: Grants Administration Structural Opportunities

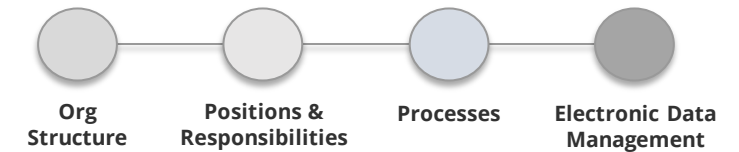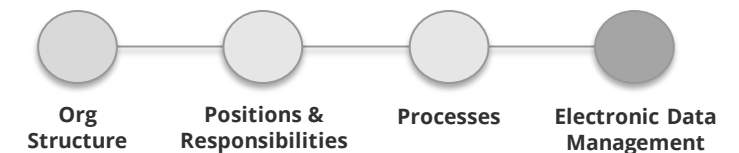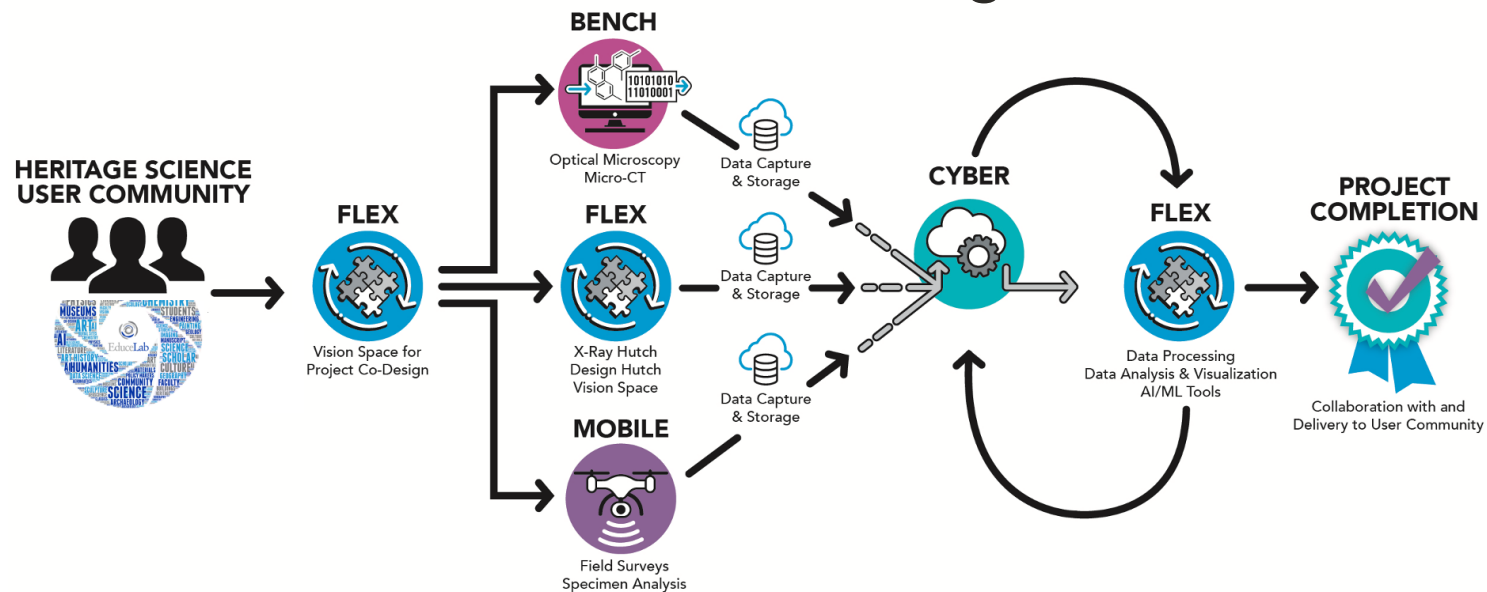|	**Opportunity**	**Solution**	**Scope Area**
6	**Prepare a Research Technology and Systems Roadmap**	Prepare a research technology and systems roadmap to plan for efficient and scalable technology-enabled research administration that automates processes and increases information transparency for the research enterprise.	Org Structure — Positions & Responsibilities — Processes — Electronic Data Management
7	**Explore Robotic and Intelligent Automation (RIA) Opportunities**	Explore Robotic Process Automation (RPA) opportunities for highlighted research administration processes to enable increased service to research faculty and more efficient data capture, reducing human error resulting from manual and time-consuming data entry.	Org Structure — Positions & Responsibilities — Processes — Electronic Data Management

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EduceLab: Infrastructure for Next-Generation Heritage Science

NSF Midscale Award: $14M

"The EduceLab instrument ecosystem demands a transdisciplinary mindset."

EduceLab

BENCH — Optical Microscopy Micro-CT

FLEX — Vision Space for Project Co-Design

FLEX — X-Ray Hutch Design Hutch Vision Space

MOBILE — Field Surveys Specimen Analysis

Data Capture & Storage

HERITAGE SCIENCE USER COMMUNITY

CYBER

FLEX — Data Processing Data Analysis & Visualization AI/ML Tools

PROJECT COMPLETION — Collaboration with and Delivery to User Community

Corey Baker
Assistant Professor
Computer Science
University of Kentucky

John Balk
Professor, Chemical &
Materials Engineering
Associate Dean: Research &
Graduate Studies
University of Kentucky

Hugo Reyes-Centeno
Assistant Professor
Anthropology
University of Kentucky

W. Brent Seales
Professor
Computer Science Department
Chair
University of Kentucky

Suzanne Smith
Professor
Mechanical Engineering
Director of the UK Unmanned Systems
Research Consortium
University of Kentucky

Renovations to the Webb Museum to include all museum functions and the NSF EduceLab: UKRF Share = $2.5M

845 Angliana Avenue

- 39,435 square foot office on 2.527 acres with two garage buildings (14,004 sq ft) on the rear 3.75 acres

- Total land allocation = 6.297 acres

- Current home to CDAR, new Cannabis Center, First Bridge Clinic, NIH HEALing communities, UKHC storage

- Final appraised value opinion = $8.5M

- Potential future uses: HIPAA-compliant computing data center, research administration needs

GET TREATMENT THAT CAN CHANGE YOUR LIFE

OUR FIRST BRIDGE CLINIC PROVIDES HELP FOR OPIOID USE DISORDER

NIH HEAL INITIATIVE

HEALing Communities Study Kentucky

Faculty and staff affiliated with the Center on Drug and Alcohol Research, the HEALing Communities Study and the First Bridge Clinic (supported by funds from the state) are housed at 845 Angliana Ave. The new Center on Cannabis is expected to be housed at this location.

Research resources include laboratory for sample processing, driving simulator test room, fully vented smoking laboratory, pain laboratory, federally approved controlled substances storage, along with exam, screening and experimental testing rooms .

First Bridge Clinic and Straus Clinic provide treatment for individuals with substance use disorders.

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Our Commitment to the Commonwealth: The Healthy Kentucky Research Building

Floor occupants:

1. Cardiovascular, Biomedical Engineering, Sanders Brown
2. Diabetes/Obesity, Substance Use Disorders, NIH HEALing Communities Study
3. Cancer, Bioinformatics, Rural Health
4. Cancer, Health Equity, Cancer Prevention and Control
5. Cancer, Infectious Diseases
6. Medicinal Chemistry, Infectious Diseases

HKRB occupants:

- 42 principal investigators (PIs)
- 310 PIs, staff and trainees

Extramural Funding of HKRB Occupants*

FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
$25.2 M	$46.7 M	$50.0 M	$64.0 M

*Estimated based on lab assignments.
Source: University of Kentucky, Office of Sponsored Projects Administration Database

Strategic Initiative 2: Foster an inclusive culture of research success to retain and develop outstanding faculty, staff and students. **Why?**

Research Culture:
- Is key to recruitment, retention and research success for a diverse and inclusive research workforce.
- Should extend from undergraduate research through the continuum to faculty research success and research leadership.
- Should be grounded in the responsible conduct of research.
- Should highlight and celebrate research success of faculty, students and staff.

Strategic Initiative #2: Foster an inclusive culture of research success to retain and develop outstanding faculty, staff and students
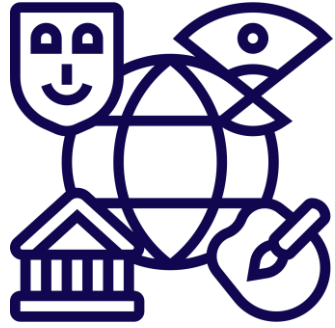
UK PURPOSE	Goal #1 - Continue programming that promotes an inclusive culture of research success across our range of disciplines.	Goal #2 - Continue and expand programming that has contributed to research success across the full spectrum of disciplines.	Goal #3 - Develop new programming that fosters a cross-campus culture of inclusive research excellence, facilitates research career development, and augments the importance of our research mission.
Putting Students First		✓	✓
Taking Care of our People		✓	✓
Inspiring Ingenuity	✓	✓	✓
Trust, Transparency, & Accountability	✓		
Many People, One Community	✓	✓	

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Strategic Initiative 2: Foster an inclusive culture of research success to retain and develop outstanding faculty, staff and students. <u>**How (as relates to FY22/23 UKRF Budget or new activities)?**</u>

- New software for undergraduate research database and linking students to mentors (II.A.2.b), other new software offerings. Advancements in undergraduate research.
- RCR training requirements and program offerings.
- Task Force on Creative Outputs in the Research mission to assist the VPR, Provost and Deans in assessing and having accountability towards the research mission.
- Created the Research Leadership Academy (II.C.3b).
- In partnership with UNITE RPA, increased the number of IPEP scholars, continued providing administrative support to the Research Scholars Program, replenished support for Faculty Diversity Start-up Pool (II.C.3).

Research Information Services
Research Data Management

Undergraduate Research (UGR): an important part of the continuum for the future of research in the U.S.

- UGR Leadership: Faculty Director Chad Risko (Associate Professor, Chemistry) and one professional staff member

- Summer program: supported 124 undergraduates representing 106 faculty mentors from 16 colleges, 54 honors students, 25 first-generation students

- Held 6 information sessions, 10 workshops, 8 tabling events, 17 drop-in peer advising, and sponsored 6 events

- UGR Showcase: 247 presentations by 374 students

- 23 Research Ambassadors stood up

- Obtained Beckman Scholars Program Grant Funding (2 awards from internal competition)

- It has been a busy first year!

Promoting the Responsible Conduct of Research (RCR)

	RCR Within Year							
Total Required To Complete RCR		Complete		Not Complete		Refresher w/out Basic		
N	%	N	%	N	%	N	%
10,494	100.0%	8,792	83.8%	1,674	16.0%	28	0.3%

Source: vRCRCumulative (Reporting) updated: May 9, 2022

RCR Online Training Requirements

- All faculty, graduate students, employees on research protocols or paid on a sponsored grant or contract

- Some professional programs are exempt from requirement

- Deans and Associate Deans for Research receive automated reports monthly on completion rates

- Exemption process exists and is reviewed by a panel of subject matter experts

- **Current Completion Rate = 83.8%**

Other RCR Measures Implemented

- Access to Electronic Laboratory Notebook for Data Storage

- Charged Task Force for Data Management and Storage

- Developing in person RCR training personalized to the type of research within academic units

Responsible Conduct of Research

Honesty: conveying information truthfully and honoring commitments

Accuracy: reporting findings precisely and taking care to avoid errors

Efficiency: using resources wisely and avoiding waste

Objectivity: letting the facts speak for themselves and avoiding improper bias

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Creation of the UK Research Leadership Academy

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WHY?

UK Research Leadership Academy: Why?

Strategic Planning: As we continue to improve the infrastructure and support for research and related career development, what would further facilitate the advancement of our research culture?

- Align infrastructure with each college's research missions
- Develop future research leaders within the colleges
- Train the next generation of research leaders
- Provide strategic and focused support for complex programmatic grant proposals
- Support emerging themes in research

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OVERVIEW

UK Research Leadership Academy

Three independent program tracks:
1. Research Leadership Career Development Program
2. Complex Programmatic Grant Development Program
3. Emerging Themes for Research

- Researchers in **all disciplines** are welcome to apply for all tracks
- Separate application requirements for each track
- Simultaneous applications for more than one track accepted
- Application review, program review, evaluation, accountability

GOALS/ACTIONS

Goal 1: Foster the development of research leadership careers

Action Item 1: Establish an Academy in Research Leadership Career Development.

Action Item 2: Support efforts of faculty and staff who have the **potential to lead** research projects, special activities and programs that align with their college's research priorities and/or lead to multidisciplinary cross-college research efforts.

Goal 2: Foster new complex programmatic research proposals

Action Item 1: Develop programmatic grant proposals or other mechanisms that support multidisciplinary research.

Complex programmatic grants incorporate aspects such as a vision for transformational research, a broad scope, partnerships, multidisciplinary approaches, educational efforts, coordination between multiple entities, team management, a sustainability plan, high institutional value, and a broad national impact.

Action Item 2: Familiarize faculty with the research infrastructure and processes and provide specialized individual assistance towards development and submission of a specific complex grant proposal.

Action Item 3: Provide best practice support for complex grant proposal preparation, submission, project management, and compliance.

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GOALS/ACTIONS

Goal 3: Foster the development of emerging themes for research

Action Item 1: Develop, foster, and provide support for research, where collaboration across disciplines and unit boundaries deepens intellectual reach, enables the development of innovative solutions and activities, and enhances impact.

Action Item 2: Promote the formation of a critical mass of innovators, who can "take the next step" toward national prominence as exemplified by significant long-term funding, innovative discovery and/or transformational impact.

Action Item 3: Provide insights from research leaders on best practices to develop new centers/institutes/programs.

Action Item 4: Provide structure, collaborative space or equipment, and seed support for new or emerging themes for research.

Action Item 5: Use model structures (IRC, RPA, etc.) to facilitate cross-unit fertilization of research.

Action Item 6: Develop a business plan for sustainability of the emerging themes.

# Status of the Research Leadership Academy Offerings

- Held competition for Tracks 1 and 3:
  - Reviewed 8 applicants for Track 1 Research Career Development (Design, Nursing, CAFÉ, Grad School, Medicine, Public Health, A&S)
  - Reviewed 4 applications for Track 3 Emerging Areas of Research
- For Track 2, Complex Grants:
  - Supporting NIH FIRST submission (July 2022)
  - Supporting Tobacco Center of Regulatory Science Application (July 2022)

An Inclusive Postdoctoral Enrichment Program (IPEP) for URM Postdocs: Supporting and Retaining Talent

- Personal navigation through the University System

- Enrichment sessions:
  - Weekly lunch and learn sessions
  - Quarterly breakout sessions tailored to fellow's specific needs

- Social & educational offerings via the Office of Institutional Diversity, Society for Postdoctoral Scholars, & Office of Faculty Advancement

- Career development panel with mentor(s), department chair, Associate Dean for Research, relevant faculty

- Networking opportunities with national leaders through speaker invitations

- Enhanced mentor training

Supporting Diversity: URM Research Postdoctoral Programs

Postdoctoral Fellowships 2011-2021
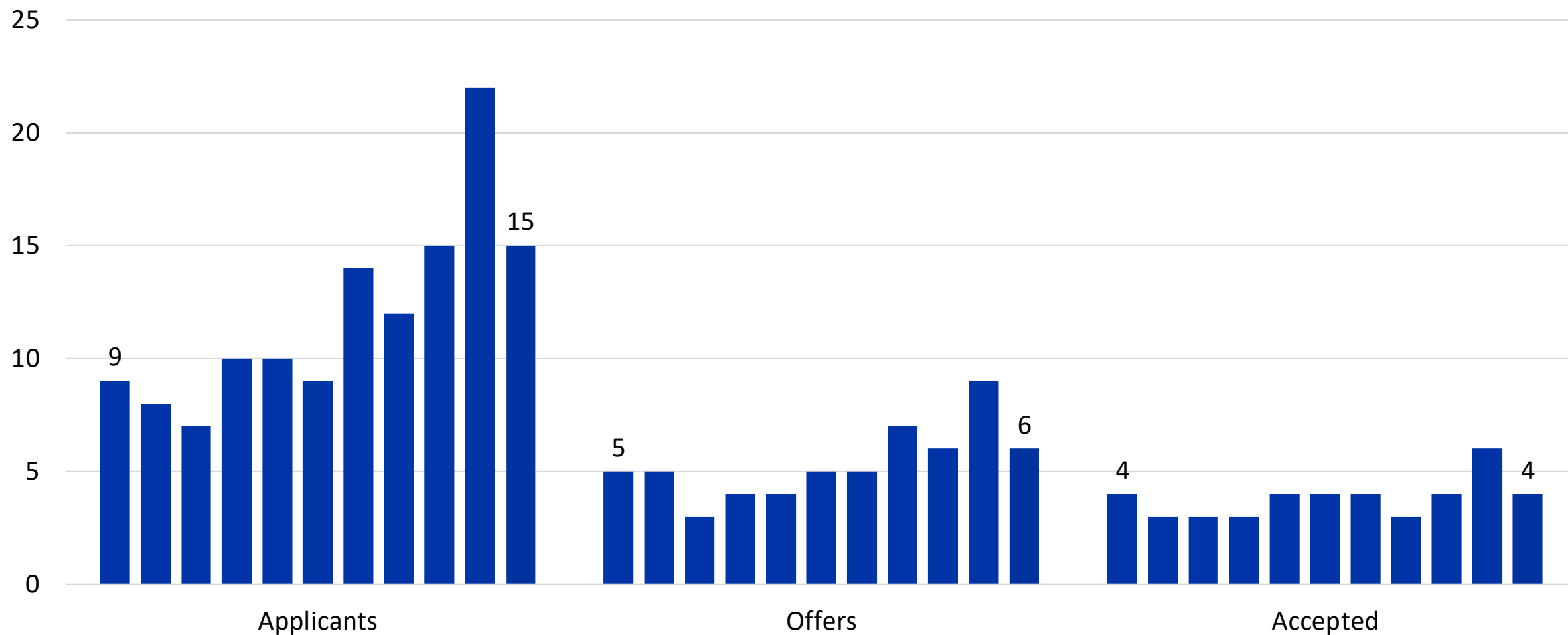
The Research Scholars Program (RSP): Supporting and Retaining Talent

- **Objective:** To support inclusive faculty research success through rigorous training, accountability, grant workshops, group and individualized enrichment and multilevel mentorship

- **Development:** Theory & evidence-based, run through OVPR and Faculty Advancement Offices

- **Hold annual competition:** Deans/Chairs support financial aspects of program (online training)

  - Six scholars supported in 2021
    Measures of success = submission of multiple NIH R01s, K awards; at least one new R-level NIH grant thus far
  - Six scholars accepted and starting program for 2022
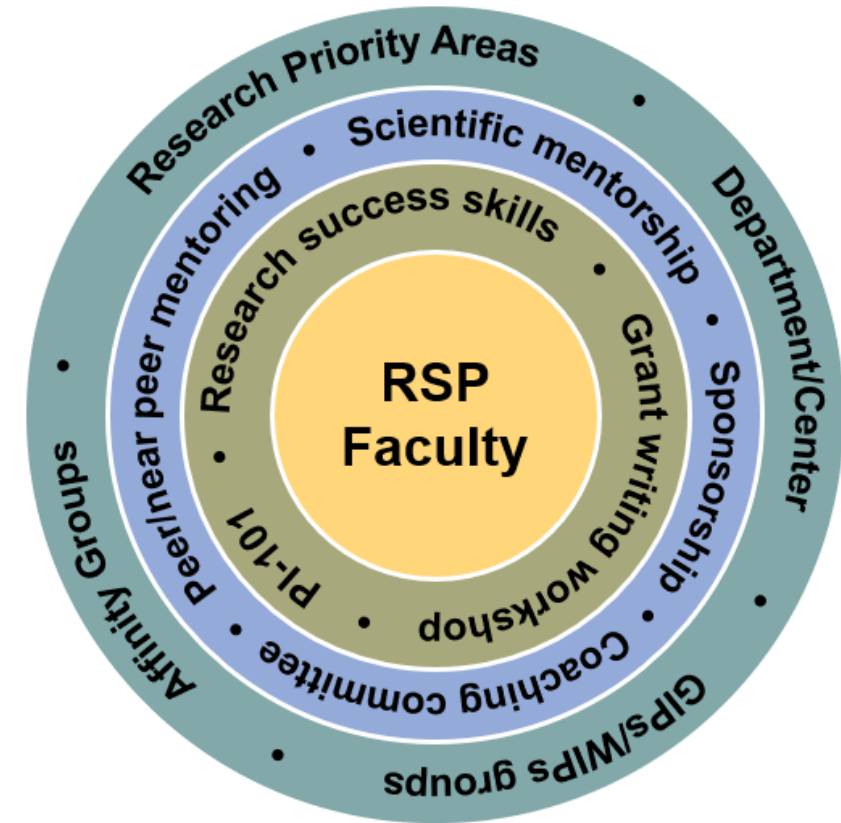
Support provided by Office of the Vice President for Research, Office for Faculty Advancement, Center for Health Equity Transformation, Center for Clinical and Translational Science, and the Colleges of Nursing, Public Health, Health Sciences, Medicine, Education, and Arts and Sciences

Research Priority Areas · Scientific mentorship · Department/Center · Sponsorship · Grant writing workshop · GIPs/WIPs groups · Coaching committee · PI-101 · Research success skills · Peer/near peer mentoring · Affinity Groups · **RSP Faculty**

UK Research

Office of the Vice President for Research

Celebrating Research Success:
A Means to Retain Talent

Goal: highlight and retain our best

- Bring recognitions to scholarly achievements

- Provide

  - Analyses and outreach to candidates/UK stakeholders

  - Data tools to help UK leaders

    o Determine who is competitive for what awards

    o Identify *critical pathways* to the most prestigious honors

  - Professional staff services to support nomination processes

- Engage college and senior administrative leaders in support of nominations

UK Proposal Development Office

Steps in the Process

Hired **PhD-level staff member (10/2019)** One New Staff Proposed for FY22/23

Developed **Awards Opportunities** database

Developed **UK Awards Repository**

Subscribed to Academic Analytics (AA) *Research Insights* – AA's honors module

Highlights of Recent UK Awards

- 1 *National Academy of Medicine* **(2020)**
- 1 *National Academy of Public Administration* **(2018)**
- 2 *Guggenheim Fellowships* **(2017, 2007)**
- 3 fellowships – *American Council of Learned Societies* since 2015
- 1 *Merle Curti Award – Organization of American Historians* **(2019)**
- 1 *Cottrell Scholar Award* **(2018)**
- 6 *AAAS Fellows* since 2017
- 2 Sloan Research Fellowships **(2020, 2021)**
- 9 *NIH Outstanding Investigator Awards (R35)* since 2017
- 6 *NSF CAREER awards* **(2021)**
- 4 Fellows – *American Academy of Nursing* **(2020, 2021)**

UK Research

Office of the Vice President for Research

Strategic Initiative 3: Invest strategically in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of those in the Commonwealth. **Why?**

- We are the land-grant, flagship public University *for* Kentucky, our research mission should benefit our citizens.

- Strategic research that supports our academic medical center and health care enterprise and that addresses health disparities of our citizens.

- Strategic research that impacts the economy of Kentucky.

- Strategic support of research that fosters racial and social justice, health equity, and best practices to support an inclusive faculty body.

UK PURPOSE

Strategic Initiative #3: Invest strategically in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of those in the Commonwealth.

Goal #1 - Continue to develop, support, and communicate research within the seven RPAs to facilitate collaboration, partnership, & new research directions.

Putting Students First	
Taking Care of our People	✓
Inspiring Ingenuity	✓
Trust, Transparency, & Accountability	✓
Many People, One Community	✓

Office of the Vice President for Research

Strategic Initiative 3: Invest strategically in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of those in the Commonwealth. **How (within FY22/23 UKRF budget)?**

- Continued support for RPA program growth (II.C.7b).
- Continued and expanded support for honorifics program to nominate RPA members and others across the institution.

Research Priority Areas (RPAs): Strategic Research that Impacts Kentucky

UNIVERSITY OF KENTUCKY
RESEARCH PRIORITY AREAS

NEUROSCIENCE
DIVERSITY & INCLUSION
ENERGY
SUBSTANCE USE DISORDER
CARDIOVASCULAR
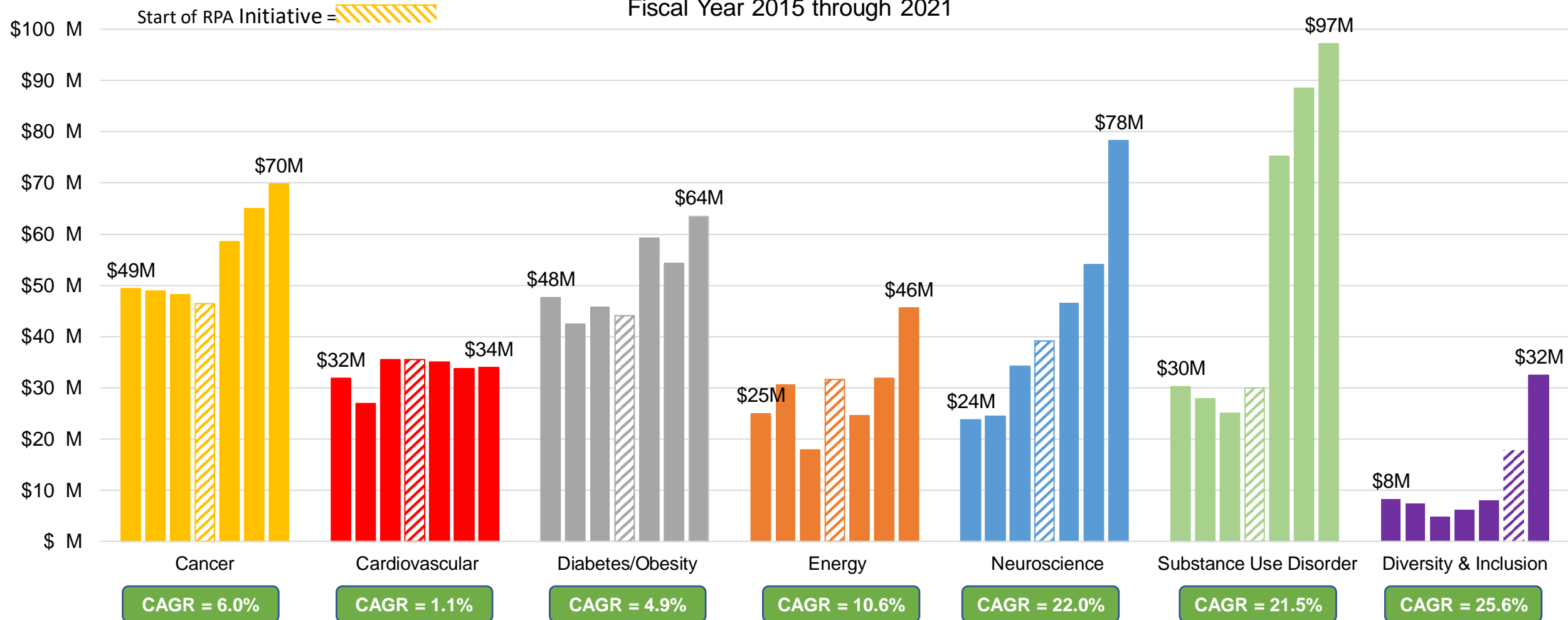CANCER
DIABETES & OBESITY

- Criteria for Designation as a Research Priority Area:
  - Local relevance
  - Existing strength
  - Diversity of disciplines
  - Impact on the Commonwealth
  - Sustainable research funding

- Each RPA developed governance structure, offers inclusive membership, and established offerings that support impactful research

- RPAs have as many as 250 members across colleges and departments, provide an umbrella structure for Centers and Alliances

- RPAs have established Research Day/Showcases

- Many RPAs offer pilot project support, tissue biobanks, student/trainee support, faculty start-up, specialized equipment

RPAs are having a positive impact on extramural funding
Awarded Grants and Contracts by Research Priority Area
Fiscal Year 2015 through 2021

Start of RPA Initiative =

Cancer	Cardiovascular	Diabetes/Obesity	Energy	Neuroscience	Substance Use Disorder	Diversity & Inclusion
$49M → $70M	$32M → $34M	$48M → $64M	$25M → $46M	$24M → $78M	$30M → $97M	$8M → $32M
CAGR = 6.0%	CAGR = 1.1%	CAGR = 4.9%	CAGR = 10.6%	CAGR = 22.0%	CAGR = 21.5%	CAGR = 25.6%

Note: Awarded projects for each thematic area are not mutually exclusive. Projects may be represented in one or more areas. Additionally, projects are based on keyword searches and may not include all related projects and may contain some projects that aren't specific to that area of research. CAGR = Compound annual growth rate. Source: UK OSPA Database, June 30, 2021

Research

Office of the Vice President for Research

Modes of Promoting/Monitoring RPA Success

- Held a formal review of all 7 RPAs including required reporting on external grants and contracts and scholarship, current and proposed use of funds, impact, and future plans

- Met with all RPA leads to review progress, implement change if needed

- Meet monthly with all RPA leads as a group, robust program discussions leading to new opportunities for collaboration, sharing of strategies, modes of two-way communication to their constituencies

- RPA program structure incorporated into Beckman Scholars Grant (funded), new UGR programs with an emphasis on URM undergraduates, NIH FIRST application

Research

Office of the Vice President for Research

Strategic Initiative 4: Strengthen engagement with communities and translate outcomes of research for the benefit of the citizens of the Commonwealth. **Why?**

- As the land-grant, flagship University *for* Kentucky:
  - Our research should engage and support the community.
  - We will work with land-grant engagement to support activities across the Commonwealth.
  - We must lead research innovation, commercialization and economic development.

UK PURPOSE

Strategic Initiative #4. Strengthen engagement with communities and translate outcomes of research for the benefit of the citizens of the Commonwealth of Kentucky.

UK PURPOSE	Goal #1 - Sustain community engaged research.	Goal #2 - Provide statewide leadership and develop culture for economic and social impact through innovation in research.
Putting Students First		
Taking Care of our People		✓
Inspiring Ingenuity	✓	✓
Trust, Transparency, & Accountability		✓
Many People, One Community	✓	✓

Strategic Initiative 4: Strengthen engagement with communities and translate outcomes of research for the benefit of the citizens of the Commonwealth.
How (within the FY22/23 UKRF budget)?

• Use of UKRF Royalty share in support of UK Innovate platforms (II.B.5).

Research Innovation: Patents, Licenses, and Start-ups: Growing the Opportunity Pipeline
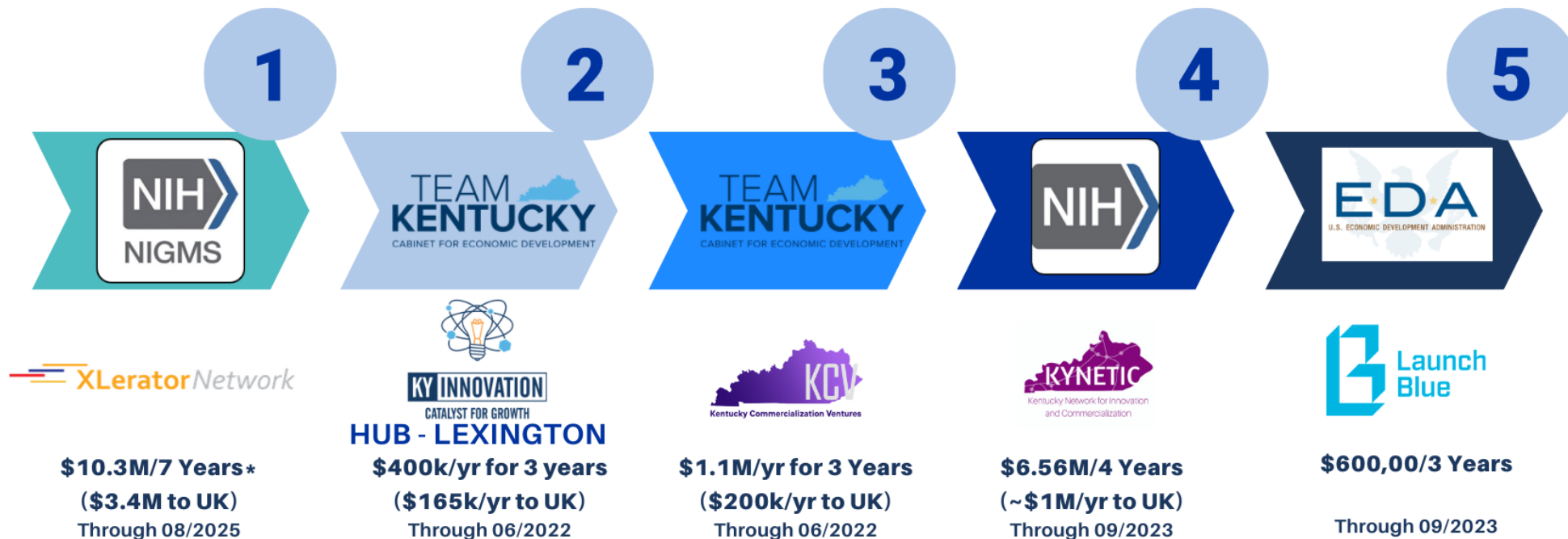
Capturing More Innovation; Transferring More Technology

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
INVENTIONS DISCLOSED	54	101	104	117	99
PATENT APPLICATIONS FILED	39	62	85	165	157
PATENTS ISSUED	40	23	26	38	22
LICENSES & OPTIONS EXECUTED	13	29	30	29	27
NEW STARTUPS FORMED	8	6	4	6	6
GROSS ROYALTY INCOME RECEIVED	$2,393,069	$2,345,029	$2,356,523	$2,943,622	$2,652,832

Source: UK Office of Technology Commercialization

UK Research

Office of the Vice President for Research

DRIVING ECONOMIC & SOCIAL IMPACT FROM RESEARCH
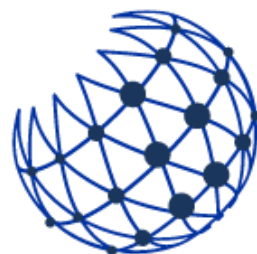
INNOVATION TRAINING

- Pre-invention activities training
- Entrepreneurism coaching and mentorship
- Career development

INDUSTRY PARTNERSHIPS

- Partner-engaged research
- Alignment with State economic development
- Increase innovation economy and competitiveness in Kentucky
- Faculty education about company dynamics, pitching and corporate approval process

SOCIAL INNOVATION

- Research, advocacy and social impact
- Increase diversity of innovators
- Facilitate growth & capacity for underrepresented innovators
- Provide resources across campus

UKRF Budget

- For FY21/22, we budgeted $62M of anticipated F&A income, representing a 5% increase from the previous year because of growth in extramural grants and contracts.

- FY22/23 Proposed Budget: $68M (a 10% increase)

Research

Office of the Vice President for Research

Tab 5, Page 1 within your packet Budget Summary

- Total Revenue:
  $170,045,300, representing an increase of $20,106,888

- Transfers and Expenditures:
  - Transfers of $27,775,700 to the institution
  - Expenditures of $142,269,600
  - For a total Transfers and Expenditures of $170,045,300

Research

Office of the Vice President for Research

Tab 5, Budget Page 2 within packet
II. Transfers to General Fund (major changes)

- A.2. Service assessment, +$52,000

- A.8. VP External Affairs, +$53,500, new shared position in Research Communications

- B.1. Research Administration Personnel and Support, +$2,045,600, increased staff to accommodate growth in grants and contracts and following external consulting on grants administration

- B.3. Office of Technology Commercialization, +$129,800, new position and partial grant funded position

- D. Student/Training Support, -$4,748,000, moved to II.D.

- E. Debt Service, +$630,000, increased payment on internal loan for HKRB

Tab 5, Budget Page 3 within packet
II. Expenditures, A. Operating expenses

- A. Operating Expenses, Research Administration
  - A.2.b. Research Administration Software: +$319,000, moving software costs to this line in budget, new software for UGR
  - A.3. Office of Sponsored Program Administration: -$142,500, moved software to A.2.b
  - A.7. Discretionary Accounts: +2,100, increased staff in units
  - A.9. Office of the Attending Veterinarian: -$71,000, moved IACUC member allotments to II.C.
  - A.2.11. Research Buildings Facilities Management: -$57,400, funding for dock manager moved to II.B.
  - A.10. VPR: -$160,000, moved software costs from VPR to Research Information Services
  - A.13. Proposal Development Office: +$4,588, increase subscription to software for grants notice distribution
  - A.14. Office of Research Integrity: -$195,200, moved IRB member allotments to II.C.

Research

Office of the Vice President for Research

Tab 5, Budget Page 3 within packet
II. Expenditures, B. Other activity

- II.B.1. Contingency reserve: +$600,000, 10% of estimated budget

- II.B.2. Private gifts/endowments: -$68,200, smaller gifts that reside in UKRF

- II.B.3. Intellectual property license expenses: -$300,000, reductions in royalty income anticipated because of increased license and patent activity

- II.B.4. Intellectual property royalty sharing program: -$3,034,748, UKRF share of royalties re-assigned to UK Innovate

- II.B.5. UK Innovate: +$3,994,548, re-assignment of fund balance and new royalty income to UK Innovate

Tab 5, Budget Page 3 within packet
II. Expenditures, C. Research Programs

- 1a. Formulaic start-up: +$1,200,000 (20% of UKRF budget)

- 1b. Other Start-up commitments: -$66,600, end of commitment to Dean of Education

- 2a-c. Formulaic incentive return programs to colleges/centers: +$1,691,900 (45% of overall budget)

- 3a. Faculty Research Support: +$161,200, support for KY Research Data Center, movement of allotments for IACUC/IRB to here

- 3b. Research Leadership Academy: +$600,000, new program offering

- 5. Shared Use Facilities: +$203,000, new Mass Spectroscopy Analytical Core, BSL3 Facility

- 7a-c. Strategic Investment Fund: +$420,000 (7% of overall budget), RPA programs

- 8a. Fund Balance Carryforward Estimate: +$4,000,000 (fund balance across departments, colleges, centers)

- 9a-c, Capital Project Investments: +$5,750,000, paid for Sanders Brown and BSL3 Lab renovation, adding renovation of EduceLab and purchase of Angliana

Research

Office of the Vice President for Research

Tab 5, Budget Page 3 within packet, II.D, Student/Training Support

- D.1. Teaching Assistants: +$451,000, moved from transfers to here

- D.2. LTJ Postdoctoral Fellowships: +$300,000, moved from transfers to here

- D.3. Graduate School Program Support: +$6,176,700, representing an increase of $2,179,700. This support will cover the difference between in and out of state tuition for Research Assistants (RA) on grants and contracts. The amount will be estimated each year based on the number of RAs supported through external grants and contracts. This will be the UKRF mode of supporting graduate activities.

Research

Office of the Vice President for Research